

**Final
Environmental Assessment for the
Airfield Safety Zone Vegetation Clearing at
Joint Base McGuire-Dix-Lakehurst**

Submitted to:

**Joint Base McGuire-Dix-Lakehurst (JB MDL)
87th Civil Engineering Squadron, Office of Asset Management (87 CES/CEA)
Joint Base McGuire-Dix-Lakehurst, New Jersey**

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**FINDING OF NO SIGNIFICANT IMPACT
AND
FINDING OF NO PRACTICABLE ALTERNATIVE
PROPOSED AIRFIELD SAFETY ZONE VEGETATION CLEARING**

JOINT BASE MCGUIRE-DIX-LAKEHURST, NEW JERSEY

OCTOBER 2011

Federal actions that potentially involve significant impacts on the environment must be reviewed in accordance with the National Environmental Policy Act (NEPA) and all other applicable laws. United States Air Force (USAF) has completed an Environmental Assessment (EA) to address the potential environmental consequences of Proposed Action and Alternatives for removal of vegetation within the flight safety zones at McGuire airfield at Joint Base McGuire-Dix-Lakehurst, New Jersey (JBMDL). The EA is attached to this Finding of No Significant Impact (FONSI) and Finding of No Practicable Alternative (FONPA) document and is incorporated by reference.

Description of Proposed Action

The Proposed Action as noted in the EA is to cut and clear vegetation in the airfield safety zones in accordance with UFC 3-260-0, Airfield and Heliport Planning and Design. Safety zones have been developed by USAF to minimize aircraft/ground and aircraft/obstruction accidents. The safety zones encompass approximately 1,038 acres of land, of which approximately 175 acres will need to be maintained under this Proposed Action to meet the Base's safety mission set forth in the UFC 3-260-01. A proposed project to be implemented in the Proposed Action would include tree and shrub cutting to a height less than three inches above grade and removal of all felled material. The trees will be cut (felled) with hand-held power chainsaws or mobile felling machines. The felled trees will be trimmed and the logs dragged (skidded) by tractors, then loaded into trucks. All tree stumps will be ground to the surface. These areas shall then be maintained to prevent the establishment of woody vegetation.

Implementation of the Proposed Action is required to provide and support the continuing need to ensure the safety and efficiency of the flying mission on JBMDL. Clearing the woody vegetation within the safety zones will allow JBMDL to comply with the UFC requirements and provide an airfield that will meet the demands of the mission.

Alternatives Considered

Alternatives to the Proposed Action that were considered included: (1) continued operations, as is, without cutting the vegetation in the safety zones (i.e., No Action Alternative); and (2) cut the vegetation within the safety zones at the prescribed line of sight angles.

Under the No Action Alternative, no vegetation would be cleared from the safety zones. The physical and operational deficiencies associated with this alternative would not eliminate or alleviate the line of sight limitations caused by the overgrown vegetation within the airfield safety zones. The overgrown vegetation would reduce the operational readiness of the Base.

The second alternative action would entail cutting woody vegetation within the safety zones. Under this alternative, obstructions (woody vegetation) would not exist above 3 inches of the runway centerline surface plane within the Primary Surface and Clear Zones. However, the Transitional Slope vegetation would be maintained at the required 14.3 percent slope, 7 horizontal feet to each vertical foot from the outer edge of the Primary Surface and Clear Zone, until it reaches 150 feet above the established runway centerline elevation.

Potential Environmental Impacts

The environmental consequences associated with implementation of the Proposed Action are summarized below and are discussed in detail in Section 4.0 of the EA.

Airspace Management and Aircraft Safety

There would be positive effects to airspace management and aircraft safety. Implementation of the Proposed Action would allow continued use of current military airspace and remove major restrictions on air commerce opportunities by allowing aircraft to continue their flying missions.

Geological/Soil Resources

There would be minor impacts to soils from project traffic and cutting woody vegetation. Soil and sediment erosion control measures would be included in site design plans to minimize long-term adverse effects to soils and sediments.

Air Quality

Project vehicle and chainsaw exhaust would be generated during vegetation removal activities as noted in the Proposed Action. These activities would not constitute a major source of emissions and would have a negligible impact on the ambient air quality at JBMDL.

Water Resources

Negligible impacts to streams and headwater floodplains are expected. Since filling and grading are not part of the Proposed Action, negligible impacts to flood storage are expected. There would also be negligible impacts to the amount or quality of groundwater/drinking water as a result of the Proposed Action.

Cultural Resources

Negligible adverse impacts to actual or potential cultural resources are expected to occur under the Proposed Action. Coordination with the State Historical Society of New Jersey was completed for the Proposed Action. In the unlikely event that archaeological artifacts are discovered during project activities, work would cease immediately and Base Historic Preservation Officers would be contacted to assess the artifacts.

Natural/Biological Resources

Unavoidable impacts will be made to existing vegetation, as forested and scrub areas will be converted to open grassland habitat. Wetland habitats may be altered but wetland acreage and areas would not change. Several potentially threatened and endangered species may occur at or in the vicinity of the project, but no direct adverse impacts are predicted if seasonal restrictions are placed upon vegetation cutting and identified Best Management Practices (BMPs) are followed to minimize potential impacts.

Noise

Noise levels would increase temporarily during tree cutting activities, but potential impacts would be temporary and considered minor. The Proposed Action is not anticipated to create additional operational noise that would impact adjacent land uses.

Health and Safety

Minor health and safety issues may be associated with tree cutting activities; however, as long as project Health and Safety Plans are followed, impacts to health and safety would be insignificant. Implementing the Proposed Action is required to provide and support the continuing need to ensure the safety and efficiency of the flying mission on JBMDL. Clearing woody vegetation within the safety zones would allow JBMDL to comply with the UFC requirements and provide an airfield that would meet the health and safety demands of JBMDL's flying mission.

Installation Restoration Program (IRP), Hazardous Materials and Waste Management

There are several IRP sites within the McGuire airfield area; however, none are expected to impact the Proposed Action. Negligible impacts on hazardous materials management during tree clearing would be expected as only minor quantities of hazardous materials are likely to be used. BMPs would be followed to minimize the possibility of a hazardous materials spill. If a spill does occur, the Spill Prevention Control and Countermeasures Plan outlines appropriate measures to be taken for spill situations. In the unlikely event that preexisting contaminated material is encountered, JBMDL's IRP manager would be contacted immediately.

Land Use

The Proposed Action would have no adverse impact to land use and would not change the land use, since the area is currently designated for airfield safety zones.

Transportation/Traffic/Infrastructure

The increase in vehicular traffic while the Proposed Action is implemented is expected to be negligible. Clearing woody vegetation in the flight safety zones would have major positive long-term effects on air transportation at JBMDL, would allow JBMDL to comply with UFC requirements, and provide for an airfield that would meet the demands of the mission requirements.

Socioeconomics and Environmental Justice

The economic benefits of the Proposed Action would be local and short-term with no permanent employment positions created.

Public Review and Comment

The National Environmental Policy Act (NEPA) process is designed to involve the public in the federal decision-making process. Formal notification and opportunities for public participation were provided during this EA. Informal coordination with government agencies and planners was conducted throughout the EA process.

The Draft EA and Draft FONSI/FONPA were provided to the New Jersey State Historical Preservation Office, New Jersey Department of Environmental Protection, United States Fish and Wildlife Service, and Burlington County. The EA was made available for public review during a 30-day public comment period at two locations: Burlington County Headquarters

Library, 5 Pioneer Boulevard, Westhampton, NJ; and Pemberton Community Library, 16 Broadway, Brown Mills, NJ. All comments from the public/governmental agencies were addressed in the EA and no adverse effect determinations were obtained from governmental agencies as appropriate.

FONSI

Based upon the analysis of potential impacts to the environment and the welfare of national security and human safety, which are documented in the attached EA, it has been determined that there will not be significant human and environmental impacts associated with the Proposed Action. Accordingly, the requirements of NEPA and the regulations promulgated by the Council on Environmental Quality and the Air Force are fulfilled, and an Environmental Impact Statement is not required. This decision has been made after taking into account all submitted information and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.

FONPA

Pursuant to EO 11990 and the authority delegated by the Secretary of the Air Force Order 791.1, I find no practicable alternative to completing the Proposed Action as defined in the attached EA. The Proposed Action, as designed, includes all practicable measures to minimize harm to the forested systems and wetland habitats within the McGuire airfield safety zones.

The signing of this FONSI/FONPA completes the environmental impact analysis process under USAF Regulations.


TIMOTHY S. GREEN
Brigadier General, USAF
Director of Installations and Mission Support

24 Oct 11
Date

Attachment:
EA, October 2011

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- Appendix C New Jersey State Historic Preservation Office Information
- Appendix D New Jersey State Threatened and Endangered Species Information
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- Appendix F Firewood Survey

LIST OF ACRONYMS

AFB	Air Force Base
AFI	Air Force Instruction
AFM	Air Force Manual
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
APZ	Accident Potential Zone
AST	Above Ground Storage Tank
AQCR	Air Quality Control Region
BASH	Bird/Wildlife Aircraft Strike Hazard
BHPO	Base Historic Preservation Officer
CAA	Clean Air Act
CE	Civil Engineering
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CRMP	Cultural Resources Management Plan
dB	Decibels
DOD	U.S. Department of Defense
EA	Environmental Assessment
EC	Expeditionary Center
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
FAA	Federal Aviation Administration
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
ft	Feet
GIS	Geographical Information System
HQ	Headquarters
INRMP	Integrated Natural Resources Management Plan
IRP	Installation Restoration Program
JB MDL	Joint Base McGuire-Dix-Lakehurst
MPI	Metropolitan Philadelphia Interstate
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NavFac	Naval Facilities Engineering Command
NDEL	National Defense Exemption Letter
NEPA	National Environmental Policy Act
NJAC	New Jersey Administrative Code
NJANG	New Jersey Air National Guard

LIST OF ACRONYMS (continued)

NJDEP	New Jersey Department of Environmental Protection
NJDFGW	New Jersey Division of Fish, Game and Wildlife
NJSA	New Jersey Statutes Annotated
NO _x	Nitrogen Oxides
NRCS	Natural Resources Conservation Service
O ₃	Ozone
OSHA	Occupational Safety and Health Administration
OSS	Operational Support Squadron
Pb	Lead
PCMP	Pinelands Commission Management Plan
PLC	Pinelands Commission
PM	Particulate Matter
PRM	Potomac-Raritan-Magothy
QAE	Quality Assurance Evaluator
ROI	Region of Influence
SABER	Simplified Acquisition of Base Engineering Requirements
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SO ₂	Sulfur Dioxide
THPO	Tribal Historic Preservation Officer
UFC	Unified Facilities Criteria
USAF	U.S. Air Force
USC	United States Code
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tank

1.0 PURPOSE AND NEED FOR ACTION

This Environmental Assessment (EA) presents the Proposed Action of clearing woody vegetation and obstructions in the vicinity of the McGuire airfield located in Joint Base McGuire-Dix-Lakehurst (JB MDL), New Jersey (**Figure 1-1** USGS General Location Map). This EA has been performed in accordance with the National Environmental Policy Act (NEPA) of 1969, 40 Code of Federal Regulations (CFR), Part 1500, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and the United States Air Force (USAF) Environmental Impact Analysis Process (EIAP) [32 CFR Part 989]. The purpose of the Proposed Action is required to keep McGuire airfield safety zones free of obstructions in accordance with Unified Facilities Criteria (UFC) 3-260-01, Airfield and Heliport Planning and Design (November, 2008). This UFC sets forth restrictions on heights of natural and manmade objects in the vicinity of airfield installations to provide for safety of flight and to ensure that people and facilities are not concentrated in areas susceptible to aircraft accidents per Air Force Instruction (AFI) 32-7063, Para 1.1 and AFI 32-7064 Para 8.

This Proposed Action is, also, in response to the air traffic system deficiencies findings on flight safety addressed in the United States Air Force Air Traffic System Evaluation Report, McGuire Air Force Base (AFB) May 2009 (**Appendix A**). The Evaluation Report states that the trees and vegetation penetrating the runway approach/departure surfaces must be removed. Flight patterns and missions have been modified to accommodate the vegetation that is penetrating the runway approaches. Currently, the height of the adjacent woody vegetation is interfering with flight operations. Aircraft carrying capacity (esp. volume of additional fuel) has been reduced, to ensure height clearance. As the JB MDL continues to grow, both in mission and complexity, it becomes even more critical for the removal of the adjacent airfield vegetation to ensure the military can meet its flight safety mission requirements.

1.1 Project Description

JB MDL is required to maintain the airfield safety zones and ensure they remain free of obstructions in accordance with UFC 3-260-01; which sets forth restrictions on heights of natural and manmade objects, for safety of flight. The proposed project would remove the vegetative obstructions within the airfield safety zones. The airfield safety zones are located in the McGuire and Dix areas of JB MDL. Safety zones have been developed by the Air Force to minimize aircraft/ground and aircraft/obstruction accidents. The safety zone size is determined by the type of aircraft flown, to ensure the proper line of sight for the most visually restricted aircraft.

JB MDL is required by the UFC to maintain an equal elevation of the runway center line a minimum of a 1,000 foot width from the center line of the runways (Primary Surface) and also a 3,000 by 3,000 feet (ft) area at the terminus of each runway (Clear Zone). Obstructions cannot exist higher than three (3) inches above the runway centerline surface elevation. Height restrictions are also enforced on lands adjacent to the Primary Surface and Clear Zone (Transitional Slope). The Transitional Slope begins at the elevation of the runway centerline at the outer edge of the Primary Surface and Clear Zone, and rises at a rate of 7

horizontal ft to each vertical foot as it proceeds away from the runway, until it reaches 150 ft above the established runway centerline elevation. **Figure 1-2** identifies the project area. The safety zones encompass approximately 1,038 acres of land, of which approximately 175 acres will need to be maintained under this Proposed Action. The majority of the clearing will occur within the Transitional Slope and Clear Zones.

To meet the Base's safety mission set forth in the UFC 3-260-01, the proposed project would include tree and shrub cutting to a height less than 3 inches above grade, and the removal of all felled material. All tree stumps in upland areas will be ground to grade. Tree stumps in the wetland areas will remain at 3 inches above grade so as to minimize disturbance. Once all applicable permits are granted and the project receives final approval, the vegetation clearing activities are expected to take a total of 4 months. The clearing activities will be carried out with traditional clearing and logging methods with trained crews. The trees will be cut (felled) with hand held power chain saws or mobile felling machines. The felled trees will be trimmed and the logs dragged (skidded) by tractors to staged stock pile areas, then loaded into trucks. Several small crews will be utilized for the clearing activities. The cleared areas will then be maintained in a fashion consistent with the Integrated Natural Resources Management Plan (INRMP) and good natural resources management practices as detailed in JB MDL's Vegetation Management Plan. These areas shall be periodically maintained to prevent the establishment of any woody vegetation above 3 inches in height. Standard commercial mechanical methods of maintenance shall be employed in upland areas, hand held methods will be employed where commercial mechanical methods are not appropriate such as in wetland areas.

The purpose of the project is to carry out the set of safety specific management measures developed in the UFC regulations while meeting the demands of the mission requirements for JB MDL. The JB MDL and the McGuire airfield serve as a major power projection platform as the largest installation in the New York Metropolitan-Delaware Valley area. Implementation of the project will support the continuing need to ensure the safety and efficiency of the flying mission on JB MDL. Clearing of the woody vegetation within the safety zones, will allow JB MDL to comply with the UFC requirements and provide for an airfield that will meet the demands of the mission requirements.

1.2 Decision to be Made

The National Environmental Policy Act of 1969, NEPA, is a Federal Statute requiring the identification and analysis of potential environmental impacts of proposed Federal actions before those actions are taken. Under NEPA, it is the continuing responsibility of the Federal government to use practicable means and efforts to preserve the nation's important historic, cultural and natural resources. The intent of NEPA is to protect, restore, or enhance the environment through well-informed Federal decisions. To this end, regulations specify that an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) must be prepared to support the decision process.

The purpose of the EA/EIS document is to analyze the Proposed Action, review the alternatives including

the no action alternative and determine whether to implement the Proposed Action (i.e., clear cutting of trees and shrubs located surrounding the airfield safety zones). The EA/EIS will provide JB MDL and the public with information required to understand the short-term and long-term consequences of the Proposed Action and its alternatives. The necessity for the preparation of an Environmental Impact Statement (EIS) will also be determined. Where applicable, mitigation measures will be recommended to minimize adverse impacts so that a Finding of No Significant Impact (FONSI) or if necessary a Finding of No Practicable Alternative (FONPA) can be generated.

1.3 Scope of Environmental Analysis

JB MDL has determined that an EA should provide the level of detail to support this decision process. If at some point along the project planning stage it is determined that an EIS is required, an EIS will be generated. This EA examines the potential effects of the Proposed Action and alternatives on environmental impacts on 12 resource areas:

- Airspace Management and Aircraft Safety
- Geological/Soil Resources
- Air Quality
- Water Resources
- Cultural Resources
- Natural/Biological Resources
- Noise
- Health and Safety
- Installation Restoration Program/Hazardous Materials and Waste
- Land Use
- Transportation/Traffic/infrastructure
- Socioeconomics/Environmental Justice

1.4 Regulatory Requirements

Air Force Policy Directive (AFPD) 32-70, *Environmental Quality*, states that the USAF will comply with applicable Federal, State, and local environmental laws and regulations, including NEPA. The USAF's implementing regulation for NEPA is the Environmental Impact Analysis Process (EIAP), 32 C FR Part 989, as amended.

Statutes and regulations to which the Joint Base must comply are summarized in **Table 1-1**. The regulatory requirements are listed under each appropriate category in **Section 3.0**.

Table 1-1

Summary of Applicable Regulations for the Proposed Action and Alternative

Natural Resources

- Air Force Instruction (AFI) 32-7064, Integrated Natural Resources Management
- DOD Financial Management Regulation 7000.14-R Volume 11A, Chapter 16, Accounting for Production and Sale of Forest Products
- 10 United States Code (USC) Section 2665, Sale of Certain Interest in Land; Logs
- 16 USC Section 1531 et seq., Endangered Species Act of 1973
- 16 USC Section 703-712, July 3, 1918, as amended 1936, 1960, 1968, 1969, 1974, 1978, 1986 and 1989, Migratory Bird Treaty Act.
- Executive Order 11988 – Floodplain Management
- Executive Order 11990 – Protection of Wetlands
- 40 Code of Federal Regulations (CFR), Part 6, Appendix A – Protection of Floodplains/Wetlands
- 40 CFR, Part 230-233 – Protection of Wetlands
- Section 404, 33 U.S.C. 1251-1376, Clean Water Act
- New Jersey Statutes Annotated (NJSA) 23:2A-1 to 13, Endangered and Nongame
- Species Conservation Act
- NJSA 13:1B-15.151 to 15.158, Endangered Plant Species List Act
- NJSA 13:9B-1 et seq., Freshwater Wetlands Protection Act
- New Jersey Administrative Code (NJAC) 7:7A-1.1 et seq., Freshwater Wetlands
- Protection Act Rules
- NJSA 23:1-1 et seq., Fish, Game, Wild Birds & Animals Act
- NJAC 7:25-1.1 et seq., Division of Fish and Wildlife Rules

Land Use

- AFI 32-7063, Air Installation Compatible Use Zone (AICUZ) Program
- UFC 3-260-01, Airfield and Heliport Planning and Design

Cultural/Historic Resources

- AFI 32-7065, Cultural Resources Management
- National Historic Preservation Act of 1966, as amended, 16 U.S.C. 470 et seq.
- 36 CFR Part 800 – Protection of Historic and Cultural Properties

Air Quality

- 40 CFR 81.34 and 81.336, National Ambient Air Quality Standards (NAAQS)

- NJAC 7:27-1.1 et seq., Air Pollution Control Rules

Noise

- 29 CFR 1910.95 Occupational Noise Exposure

Wastewater/Stormwater

- 40 CFR Part 122.26 Storm Water Discharges
- NJSA 58:10A-1 et seq., Water Pollution Control Act
- NJAC 7:14A-1.1 et seq., New Jersey Discharge Elimination System Rules

The Air Force has determined that an application to the Pinelands Commission for approval of this project would be incompatible with national defense requirements which require safety violations to be corrected as soon as possible. In accordance with N.J.A.C. 7:50-4.52(d), this project is mission critical for national defense requirements and the Pinelands Commission review of this project is hereby waived, **Appendix B.**

2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action and Preferred Alternative: Clearing of Vegetation

JB MDL is required to maintain the airfield safety zones and ensure they remain free of obstructions in accordance with UFC 3-260-01. The proposed project would remove the vegetative obstructions within the airfield safety zones. Safety zones have been developed by the Air Force to minimize aircraft/ground and aircraft/obstruction accidents. The safety zones encompass approximately 1,038 acres of land, of which approximately 175 acres will need to be cleared and maintained under this Proposed Action. The majority of the clearing will occur within the Transitional Slope and Clear Zones.

The following are definitions of the pertinent safety zones (**Figure 2-1**).

Primary Surface. The Primary Surface is an imaginary ground surface safety plane 2,000 ft wide and 400 ft longer than the runway length. It is centered around the runway, with 1,000 ft of primary surface along each side of the centerline, and 200 ft of primary surface beyond each threshold, end of runway. The elevation of the Primary Surface is equal to the elevation of the runway centerline, along the entire length of the runway. The area of the Primary Surface beyond each threshold takes on the elevation of the runway centerline at the threshold. Obstructions cannot exist beyond three inches of the ground surface plane.

Clear Zone. The Air Force Clear Zone is an imaginary safety plane zone in which no obstruction can exist that is greater than three inches of the surface plane. The Clear Zone is 3,000 ft long and 3,000 ft wide, centered along the extended runway centerline. It begins at the runway threshold and extends outward (away from the runway) at the same elevation as the runway threshold centerline for that runway end.

Transitional Slope. The Transitional Slope is a safety clearance which extends from the Primary Surface and the Clear Zones. It starts at the elevation of the runway centerline, and rises at a rate of 7 horizontal ft to each vertical foot as it proceeds away from the outer edge of the Primary Surface and Clear Zone, until it reaches 150 ft above the established airfield elevation.

To meet the Base's safety mission and requirements set forth in the UFC 3-260-01, the activities associated with the project would include tree and shrub cutting to a height less than three inches above grade, and the removal of all felled material as per New Jersey Statutes Annotated (NJSA) 13:9-23, Accumulations in forests as extraordinary fire hazard and public nuisance. All tree stumps in upland areas will be ground to the surface. The vegetation clearing activities are expected to take a total of four months. The clearing activities will be carried out with traditional logging methods with trained logging crews. The trees will be cut (felled) with hand held power chain saws or mobile felling machines in upland areas, handheld methods will be employed where commercial mechanical methods are not appropriate such as in wetland areas. The felled trees are trimmed and the logs are dragged (skidded) by tractors, then loaded into trucks. However, no motorized vehicles will be used within habitat of the bog

turtle. Several small crews will be utilized for the clearing activities.

The cleared areas will then be maintained in a fashion consistent with the Integrated Natural Resources Management Plan (INRMP) and good natural resources management practices as detailed in JB MDL's Vegetation Management Plan. Generally, for areas that have not historically been maintained those areas will follow the "unimproved grounds" requirements. Typically, "unimproved grounds" are not mowed more than twice a year; these areas are mowed to prevent the establishment of any woody vegetation. Standard commercial mechanical methods of cutting and mowing shall be employed in upland areas, handheld methods of cutting will be employed where commercial mechanical methods are not appropriate such as in wetland areas.

2.2 Alternative Action: Partial Vegetation Cutting

The alternative action also has JB MDL complying with the height restrictions found in UFC 3-260-01. The alternative action includes the cutting of woody vegetation within the safety zones allowing JB MDL to meet the mission of maintaining aircraft and pilot safety. Under this alternative, vegetative obstructions will not exist within three (3") inches of the runway centerline surface plane within the Primary Surface and Clear Zones. However, the vegetation found within the Transitional Slope will be maintained at the required 14.3 percent slope, 7 horizontal ft to each vertical foot from the outer edge of the Primary Surface and Clear Zone, until it reaches 150 ft above the established runway centerline elevation.

The vegetation clearing activities for this alternative action are expected to take 16 months or four times longer than that of the Proposed Action with the same crews. This activity would require specific surveying to ensure the desired vegetative angle. Along with the standard tree clearing equipment, the workers will be required to repeatedly climb the trees for the purpose of topping and trimming to achieve the proper angled slope (14.3 percent). This alternative will also have a significant increase in work safety issues. The maintenance requirements for the alternative action are also very high and would be similar in effort, cost and time to the initial cutting activity due to the precise cutting requirements.

2.3 No Action

Implementation of the No Action Alternative would mean that the proposed aircraft safety measures set forth in UFC 3-260-01 would not be implemented. The No Action Alternative serves as a benchmark against which Federal actions can be evaluated. Inclusion of a No Action Alternative is prescribed by CEQ regulations and therefore, will be carried forward for further analysis.

Under the No Action alternative, no vegetation will be cleared from the safety zones. The physical and operational deficiencies associated with this alternative would not eliminate or alleviate the line of sight limitations caused by the overgrown vegetation within the airfield safety zones. The No Action alternative will reduce the operational readiness of the Base. If the Base is to follow UFC regulations and remedy the air traffic system deficiencies findings on flight safety addressed in the United States Air

Force Air Traffic System Evaluation Report, McGuire May 2009, than the No Action Alternative is not feasible. Since the JB MDL continues to grow both in mission and complexity it becomes even more critical for the removal of the adjacent airfield vegetation to ensure the military flight safety mission requirements.

2.4 Alternatives Eliminated from Further Study

Additional alternatives were initially considered but then eliminated from further study. One alternative eliminated was to leave the felled vegetative material in place. Other alternatives included alternative locations, size and orientation of the tree removal project. Since the site in question is an existing Air Force airfield an alternative location, size and orientation for the safety zone tree removal is not feasible. None of the eliminated alternatives would allow the Base to comply with the Air Force safety requirements set forth in UFC 3-260-01.

3.0 AFFECTED ENVIRONMENT

This section identifies existing environmental conditions at the subject site that could be affected by the Proposed Action, alternative action and the no action alternative. Where applicable, information from the Integrated Natural Resources Management Plan (INRMP), McGuire (USAF, 2001) and INRMP, Fort Dix (USA, 2002) is referenced. When a determination has been made that detailed analysis of a particular resource area is not necessary and can be eliminated, the resource area subsection describes the rationale for its exclusion. The information on existing conditions given for a resource area is considered the baseline against which potential effects of implementing either the Proposed Action or the No Action Alternative can be evaluated.

3.1 Airspace Management and Aircraft Safety

The management of airspace is governed by Federal legislation and by military regulations and procedures. The ultimate authority in assigning and managing airspace is the Federal Aviation Administration (FAA). The FAA has acknowledged the need for military aircraft to conduct certain training operations within airspace that is separated from other types of civilian and commercial aircraft, and sets aside such airspace for military use.

The objective of airspace management is to meet military operational mission and training requirements through the safe and efficient use of available navigable airspace. AFI 13-201, *U.S. Air Force Airspace Management*, indicates that this objective is to be accomplished in a peacetime environment, while minimizing the impact on other aviation users and the public.

All military aircraft fly in accordance with Federal Aviation Regulations (FAR) Part 91, *General Operating and Flight Rules*, which governs such things as operating near other aircraft, right-of-way rules, aircraft speed, and minimum safe altitudes. This regulation has precise requirements for the use of airports, heliports, other landing areas, and local flying rules.

Obstructions to air navigation are considered to be natural objects or man-made structures that protrude above the planes or imaginary surfaces. Runway airspace imaginary surfaces, in graphical form, are the result of the application of obstruction height criteria to areas surrounding the runways. Imaginary surfaces are surfaces in space around airfields in relation to runways. UFC 3-260-01, *Airfield and Heliport Planning and Design*, contains a more complete description of runway airspace imaginary surfaces. USAF obstruction criteria in UFC 3-260-01 are based on those contained in FAR Part 77, *Objects Affecting Navigable Airspace*, Subpart C.

Designation of safety zones around the airfield and restriction of incompatible land uses can reduce the public's exposure to safety hazards. DOD analyses have determined that the areas immediately beyond the end of military runways and along the approach and departure flights path have a significant potential for aircraft accidents.

As shown on **Figure 2-1**, McGuire includes two Class B runways and more than 1 million square yards of

aircraft parking aprons. McGuire's aircraft parking aprons are designed to accommodate the installation's assigned aircraft as well as transient aircraft. Approximately 38,000 annual aircraft operations occurred at McGuire for the 12-month period ending June 2008. Approximately 20 percent of these operations occurred at night (i.e., 10:00 p.m. to 7:00 a.m.). There are 55 aircraft currently assigned to McGuire, which include the C-17, KC-10, KC-135, and the C-32 aircraft. McGuire also receives a variety of transient aircraft from other installations. The proposed action will allow for the continued safe operations of the existing runway. The clearing of the trees will not allow for larger or additional aircraft to use the runway.

3.2 Geological/Soil Resources

The major portion of the land area on the McGuire and Dix areas of JB MDL are composed of non-conforming Miocene Epoch sedimentary deposits of the Tertiary Period. The geologic formations in the area are composed primarily of unconsolidated to semi-consolidated sand or sand and gravel interrupted by localized beds of clay, sandy clay, or gravelly clay. Regional coastal plain geology in New Jersey is characterized by a wedge of sedimentary formations that thickens moving east towards the Atlantic Ocean. The sedimentary formations, underlain by crystalline basement rock, are approximately 1,000 feet thick in the area. The major mineral resources of the area are sand, gravel, and clay deposits common to many coastal plain areas. The major sedimentary formations include the Lower Potomac-Raritan-Magothy (PRM) Aquifer, Middle PRM Aquifer, Upper PRM Aquifer, Merchantville-Woodbury Confining Unit, Englishtown Aquifer, Marshalltown-Wenonah Confining Unit, Wenonah-Mount Laurel Aquifer, Navesink/Hornerstown/Manasquan Formations, Vincentown Formation and Kirkwood-Cohansey Aquifer.

Surface soils on the McGuire and Dix areas of JB MDL are typically sandy and permeable and have a shallow water table (6 ft or less below ground surface). The terrain within the Base is generally flat. Soil types are shown in **Figure 3-1**. Most of the surface soils in the area have been heavily disturbed by construction of buildings, roadways, airfield pavements, and other facilities. Soils in these areas are classified as "urban land". The soil has slight limitations for industrial or commercial use, moderate limitations for woodland or wildlife use, and severe limitations for farming and dug ponds. Areas not classified as urban (predominantly the eastern portion of the area of concern) contain soils that appear to have formed directly on tertiary or redeposited sand (along creek margins) (USDA 1971).

The more common native soils series in the undisturbed areas include Atsion, Downer, Evesboro, Klej, Lakehurst and Sassafras. These soils exhibit dark grayish brown A horizons, and olive brown or brownish gray B horizons of varying thickness. They are strongly acidic and range from well drained to

somewhat poorly drained. These soil series are very common throughout the region.

3.3 Air Quality

The air quality in a given region or area is measured by the concentration of various pollutants in the atmosphere. The Clean Air Act (CAA) directed by the United States Environmental Protection Agency (USEPA) to develop National Ambient Air Quality Standards (NAAQS) for pollutants that have been determined to affect human health and the environment. The NAAQS are designed to limit pollution in the air anywhere in the United States in order to protect human health and public welfare. The primary NAAQS are ambient air quality standards to protect the public health; secondary NAAQS specify levels of air quality to protect the public welfare such as effects on vegetation, crops, wildlife, economic values, and visibility.

The NAAQS have been established for six criteria pollutants, which include sulfur dioxide (SO₂), nitrogen oxides (NO_x), particulate matter (PM), carbon monoxide (CO), ozone (O₃), and lead (Pb). Sections 107 and 110 of the CAA give the responsibility to each state of developing a set of regulations that implement the NAAQS, called State Implementation Plans (SIPs). The State of New Jersey has adopted the NAAQS and promulgated an additional state ambient air quality standard for suspended particulate matter (NJAC 7:27-13.3).

USEPA classifies the air quality in an air quality control region (AQCR), or in subareas of an AQCR, according to whether the concentrations of criteria pollutants in ambient air exceed the NAAQS. All areas within each AQCR are therefore designated as either "attainment," "non attainment," "maintenance," or "unclassified" for each of the six criteria pollutants. Attainment means that the air quality within an AQCR is better than the NAAQS, nonattainment indicates that criteria pollutant levels exceed NAAQS, maintenance indicates that an area was previously designated nonattainment but is now in attainment, and unclassified means that there is not enough information to appropriately classify an AQCR, so the area is considered attainment.

JB MDL McGuire airfield is in Burlington County, which is within the Metropolitan Philadelphia Interstate (MPI) AQCR. Air quality issues at JB MDL are subject to rules and regulations developed by the NJDEP. The air quality in Burlington County has been characterized by USEPA as moderate nonattainment areas for 8-hour ozone. McGuire airfield currently has a 1-hour O₃ General Conformity emissions budget that will remain in place until a new budget is established under the 8-hour O₃ standard. Therefore, for purposes of General Conformity analysis, the *de minimis* thresholds for JB MDL are based on a severe nonattainment area for O₃. Burlington County has been designated as a nonattainment area for PM 2.5. Burlington County is designated as unclassified/attainment for all other criteria pollutants.

USEPA established *de minimis* emissions levels and exempted certain actions. USEPA also allowed Federal entities to develop their own list of actions which are presumed to conform. For non-exempt

actions that increase emissions above the *de minimis* levels, the Federal agency must demonstrate that the action will conform with the SIP or will not cause or contribute to any new violation of any standard in any area; interfere with provisions in the applicable SIP for maintenance of any standard; increase the frequency or severity of any existing violation of any standard; or delay timely attainment of any standard or any required interim emissions reductions or other milestone.

An air permit would not be required for the construction and operation of the clear cutting of vegetation proposed in this EA as it meets the “*de minimis*” and wood cutting equipment is exempt. The exemption is addressed under NJAC 7:27-8 Appendix 1 Tables A and B *De Minimis* Air Contaminant Source Exemption and NJAC 7:27-8.2 (e)(i)(iii) Exemption Criteria for wood cutting equipment.

3.4 Water Resources

The study of Water Resources includes surface water and groundwater and their interaction.

Groundwater. Groundwater beneath JB MDL exists in shallow and deep aquifer systems. Shallow groundwater flows through highly permeable sands of the Kirkwood-Cohansey aquifer. This shallow groundwater system extends to depths between 20 and 75 feet below ground surface (bgs) (USDA-SCS, 1971). Groundwater in this aquifer flows towards lowland areas where water discharges to Rancocas Creek, Crosswicks Creek, and other minor tributaries. The deep aquifers in the JB MDL area are the Mount Laurel-Wenonah, Englishtown, and Potomac-Raritan-Magothy (PRM) aquifers, in order of depth below ground surface. These deep aquifers are pumped as a public water source for JB MDL, and the Village of Wrightstown.

Other major sedimentary formations include the Lower PRM Aquifer, Middle PRM Aquifer, Upper PRM Aquifer, Merchantville-Woodbury Confining Unit, Englishtown Aquifer, Marshalltown-Wenonah Confining Unit, Wenonah-Mount Laurel Aquifer, Navesink/Hornerstown/Manasquan Formations, and the Vincentown Formation.

The aquifers underlying JB MDL are in the New Jersey Coastal Plain aquifer system, which has been designated as a Sole Source Aquifer (SSA) pursuant to the Safe Drinking Water Act. The USEPA defines a Sole Source Aquifer as an aquifer that supplies at least 50 percent of the drinking water consumed in the area overlying the aquifer. As an SSA, it is considered highly susceptible to contamination through its recharge zone from a number of sources, including chemical spills, leachate from landfills, and storm water runoff. Under the SDWA, the USEPA is tasked to review federally funded projects proposed for construction in a project review area that includes the New Jersey Coastal Plain Area and a portion of the aquifer stream flow source zone.

Surface Water. Precipitation falling on the McGuire airfield drains by overland flow to diversion structures and then into surface streams that drain into two local watersheds, Crosswicks Creek and

Rancocas Creek. The majority of JB MDL McGuire airfield's surface water flows through pipes/conduits, concrete-lined channels and streams which have been straightened to facilitate rapid discharge of stormwater from the Installation. The northern portion of the McGuire airfield drains to South Run Creek, which is a tributary of Crosswicks Creek. The southern portion of the McGuire airfield drains to the south to two small tributaries of Rancocas Creek; Jacks Run and Larkins Run (McGuire, 2001) (see **Figure 3-2**).

Since the surface waters in the vicinity have, historically, been straightened and deepened to facilitate rapid movement of stormwater within the McGuire airfield area, they have little to no natural flood plain. There are no delineated 100 year floodplains mapped within the proposed project area. The streams become more natural east of McGuire area, in the Dix area of the Base.

3.5 Cultural Resources

Federal cultural resources laws and regulations include the National Historic Preservation Act (NHPA) (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990).

The NHPA focuses on cultural resources such as prehistoric and historic sites, structures, districts, or any other physical evidence of human activity considered important to a culture, a subculture, or a community for scientific, traditional, religious, or other reason. Such resources might provide insight into the cultural practices of previous civilizations or they might retain cultural and religious significance to modern groups. Resources that are judged to be important under the NHPA are determined eligible for or listed in the National Register of Historic Places. They are termed "historic properties" and are provided some level of protection under the NHPA. Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertaking on historic properties, and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. If a project may affect historic properties, the Joint Base cultural resources manager will initiate consultation with the State Historic Preservation Officer/Tribal Historic Preservation Officer (SHPO/THPO).

The McGuire 2004 Integrated Cultural Resources Management Plan (ICRMP) has identified sensitive areas in the vicinity of the McGuire airfield. These areas were identified as sensitive primarily due to the possible presence of historic sites and historic structures. Historic structures are primarily present as World War II era buildings. Historic sites predominantly consist of buildings associated with a 19th century community and associated farmsteads.

The history of JB MDL goes back to the 1920s, when a single strip runway, known as Rudd Field was constructed by the Army Air Corps. At that time, the land that is now JB MDL was agricultural fields

and undeveloped woodlands. When the U.S. Air Force assumed control of the installation in 1949, the installation was renamed McGuire AFB.

The existing McGuire airfield and runways have been upgraded over the years from the original Rudd Field, a grass airfield, which was in operation from 1926 to 1937. The runways were widened, lengthened, graded, and received a gravel surface in 1939. As the McGuire airfield expanded, the town of Pointville was demolished, except for the cemetery along the Pointville-Wrightstown Road. The Pointville Cemetery, located in the southern clear zone, is privately owned and maintained. The former site of the Pointville village store (Site 28-Bu-473) and other Pointville structures (28-Bu-542)) are located in the clear zone at the west end of the runway.

The NJ SHPO has indicated that the project, as proposed, will not adversely affect historic properties. **(Appendix C).**

3.6 Natural/Biological Resources

This section describes the existing conditions and provides a description of the vegetation, wildlife, threatened and endangered species, and wetlands anticipated to occur in the forested areas surrounding the McGuire airfield.

Biological resources include native or naturalized plants and animals, and the habitats, such as wetlands, forests, and grasslands, in which they exist. Sensitive and protected biological resources include plant and animal species listed as threatened or endangered by the USFWS or a state.

Wetlands are an important natural system and habitat because of the diverse biological and hydrologic functions they perform. Wetlands provide an important function in recharging aquifers and buffering streams by filtering sediment and nutrients. Wetlands have been defined by agencies responsible for their management. The term “wetland” used herein, is defined using USACE conventions. The USACE has jurisdiction to protect wetlands under Section 404 of the CWA using the following definition:

... areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 CFR 328.3[b]). Wetlands generally include swamps, marshes, bogs, and similar areas. Wetlands have three diagnostic characteristics that include: (1) over 50 percent of the dominant species present must be classified as obligate, facultative wetland, or facultative, (2) the soils must be classified as hydric, and (3) the area is either permanently or seasonally inundated, or saturated to the surface at some time during the growing season of the prevalent vegetation (FICWD, 1989).

JB MDL is located within the Pinelands National Reserve, an ecological area designated by State and Federal legislation. The United Nations also has designated the Pinelands as a Biosphere Reserve. The National Parks and Recreation Act of 1978 established the Pinelands National Preserve, which

encompasses parts of seven southern New Jersey counties. The Pinelands Commission was established to develop, adopt and regulate a Comprehensive Management Plan for the Pinelands. The Plan was designed to protect the unique natural, ecological, agricultural, archaeological, historical, scenic, cultural and recreational resources of the Pinelands. JB MDL is considered to be in the oak-pine fringe of the Pinelands. The areas to the south of JB MDL's McGuire airfield contain a wide variety of representative Pinelands communities.

Vegetation. The vegetation types identified within the proposed clearing project include extensive areas of maintained grasslands (inner airfield), lawns, and other landscaped areas (adjacent to buildings). Wooded areas in the vicinity consist of three basic types: sweet gum mix, mixed hardwoods and planted stands of pines.

The areas within the runway consist of maintained grasslands. Common plant species that occur on the McGuire airfield include broomsedge (*Andropogon virginicus*), little bluestem (*Schizachyrium spp.*), barnyard grass (*Echinochloa spp.*), several species of foxtail (*Setaria spp.*), bushclover (*Lespedeza spp.*), orchard grass (*Dactylis glomerata*), Canada thistle (*Cirsium arvense*), milkweed (*Asclepias spp.*), early goldenrod (*Solidago juncea*), and common reed (*Phragmites australis*) (McGuire INRMP, 2001). There are also palustrine emergent wetlands within the McGuire airfield. The diversity of species is highly variable, but include dominants such as tussock sedge (*Carex stricta*), and soft rush (*Juncus effusus*), with a variety of other wetland plants such as scrubby-beard bluestem (*Andropogon glomeratus*), spikerush (*Eleocharis spp.*), marsh fern (*Thelypteris palustris*), sensitive fern (*Onoclea sensibilis*), sundew (*Drosera spp.*), and silky dogwood (*Cornus amomum*).

Sweet gum mixed forest, is a typical forested wetland type in New Jersey and is dominated by sweet gum (*Liquidambar styraciflua*), and a mix of red maple (*Acer rubrum*), and blackgum (*Nyssa sylvatica*). Mixed hardwoods are typically upland forests which include white oak (*Quercus alba*), scarlet oak (*Quercus coccinea*), red maple, sassafras (*Sassafras albidum*), shortleaf (*Pinus echinata*) and pitch pines (*Pinus rigida*). Other upland forested areas are dominated by planted pine species.

Wildlife. The forests, meadows, wetlands, and lakes surrounding the JB MDL McGuire airfield are home to a variety of wildlife, including more than 400 species of various mammals, birds, reptiles, and amphibians (Fort Dix INRMP 2009). White-tailed deer (*Odocoileus virginianus*), woodchuck (*Marmota monax*), Eastern cottontail rabbit, gray squirrel (*Sciurus carolinensis*), gray fox (*Urocyon cinereoargenteus*), and red fox (*Vulpes fulva*) are common species found on the installation along with game birds such as ruffed grouse (*Bonasa umbellus*), woodcock (*Scolopax minor*), pheasant (*Phasianus colchicus*), bobwhite quail (*Colinus virginiana*), and wild turkeys (*Meleagris gallopavo*) (Fort Dix INRMP 2009). More than 50 species of fish are found in the lakes and streams of Fort Dix. The Crosswicks and Rancocas creeks are spawning grounds for blueback herring (*Alosa aestivalis*) and alewife (*Alosa pseudoharengus*), both anadromous fish (Fort Dix 2009).

Threatened and Endangered Species. Surveys for endangered and threatened vertebrate animals were

conducted in 1994 and 1997 by the New Jersey Department of Environmental Protection (NJDEP) – Division of Fish, Game and Wildlife (NJDFGW) (McGuire INRMP, 2001). Additional biological surveys were conducted in 2000 by USDA NRCS. Three species of rare breeding birds and two plant species were observed in the vicinity of the McGuire airfield within JB MDL. The McGuire surveys revealed breeding populations of upland sandpiper (*Bartramia longicauda*), grasshopper sparrow (*Ammodramus savannarum*), and savannah sparrow (*Passerculus sandwichensis*). These three species are grassland species and as expected all sightings were within the maintained grassland community within the inner McGuire airfield.

Surveys by NJDFGW were also conducted at Fort Dix between 1993 and 1995 and reported in February 1996. The February 9, 1996 report indicated several threatened and endangered species were identified within JB MDL. The State endangered Pied-bill grebe (*Podilymbus podiceps*) was identified on Base and the Pine Barrens tree frog (*Hyla andersonii*), was identified approximately one mile south east of the proposed cutting area. During the survey barred owls (*Strix varia*) were also detected. Additional barred owl surveys were performed in 2007 and 2008, by Environment and Engineering, Inc. for Fort Dix. The 2008 survey revealed the presence of barred owls to the north, south and east of the large runway but not within the areas to be cut.

In addition, a pair of bald eagles has been nesting near the Burlington/Ocean County border on Fort Dix since 2000. Though the bald eagles do not nest in the study area, nor do they prefer wooded habitat, they do have a large home range and have been spotted in the area.

In a letter dated April 8, 2009, the USFWS noted the potential habitat for the Federally listed bog turtle (*Clemmys muhlenbergii*) may exist on site. In July, 2011, Herpetological Associates performed a Phase 1 bog turtle survey at 46 distinct locations within the project area. No bog turtles or evidence of their presence were found or observed on site. In addition, only one site surveyed contained the proper habitat to support the species. In a letter dated September 21, 2011, the USFWS consultation has taken place and determined that with best management practices in place that no adverse impact will occur.

The New Jersey Natural Heritage Program identified two state endangered vegetative species of concern which have been found in the vicinity of the McGuire airfield; Greene's rush (*Juncus greenii*) and Clustered bluets (*Oldenlandia uniflora*).

Based on the data from the INRMP and from the State and Federal data base, no other federally listed or federal candidate species of wildlife were observed or are known to breed near JB MDL's McGuire airfield.

Information on specific threatened and endangered species identified in the area is in **Appendix D**.

Wetlands. Wetland delineations were performed for the proposed project by E2M and Shaw Environmental, 2005 and 2006 to determine wetland acreage to be impacted. Wetlands and waters were

delineated in accordance with the Federal Manual for Identifying and Delineating Jurisdictional Wetlands (FICWD, 1989). This procedure calls for the identification of three parameters described as hydrophytic vegetation, hydric soils, and wetland hydrology in any given area in order to identify that area as a wetland. Wetlands were identified within the Clear Zones and Transitional Slopes on JB MDL property (**Figure 3-3** and **Table 3-1**).

Table 3-1
Wetland Habitats within
Proposed Vegetation Clearing Areas

Wetland Habitats	Wetland Impacts
Clear Zone	
• Open water/Emergent	49.7 acres
• Scrub-shrub	12.5 acres
• Forested	37.4 acres
Transitional Slope	
• Open water/ Emergent	10.3 acres
• Scrub-shrub	3.5 acres
• Forested	99.6 acres

The NJDEP has determined that they do not regulate tree cutting in the wetlands; since the root systems will not be removed (i.e. the tree stumps not pulled) and there is no discharge of pollutants to the wetlands, therefore a permit from the NJDEP is not required (**Appendix E**).

3.7 Noise

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Noise can be intermittent or continuous, steady or impulsive, and can involve any number of sources and frequencies. It can be readily identifiable or generally nondescript. Human response to increased sound levels varies according to the source type, characteristics of the sound source, distance between source and receptor, receptor sensitivity, and time of day.

Sound is measured with instruments that record instantaneous sound levels in decibels (dB). There are various factors that may indicate noise is a problem in the workplace. While people react differently to noise, subjective responses should not be ignored because they may provide warnings that noise may be at unacceptable levels. (OSHA, website)

Noisy conditions can make normal conversation difficult.

- When noise levels are above 80 decibels (dB), people have to speak very loudly.
- When noise levels are between 85 and 90 dB, people have to shout.

- When noise levels are greater than 95 dB, people have to move close together to hear each other at all.

Noise levels for various areas are identified according to the use of the area. Levels of 45 decibels are associated with indoor residential areas, hospitals and schools, whereas 55 decibels is identified for certain outdoor areas where human activity takes place. The level of 70 decibels is identified for all areas in order to prevent hearing loss. (USEPA, website).

The noise chart below lists average decibel levels for everyday sounds.

Table 3-2
Noise Chart

Noise Level dB	Common Sounds	Effect
150 to 120	Fireworks, firearms, jet engine, jackhammer, jet plane takeoff, siren	Painful
110 to 90	Model airplane, chain saw, gas lawn mower, snowblower, hand drill, pneumatic drill, subway	Extremely loud
90 to 70	Blow dryer, kitchen blender, food processor, busy traffic, vacuum cleaner, alarm clock	Very loud
70 to 40	Typical conversation, dishwasher, clothes dryer, moderate rainfall, quiet room	Moderate
30	Whisper, quiet library	Faint

(Source <http://www.asha.org/public/hearing/Noise/>)

To address both noise and safety, the DOD required military departments to establish an AICUZ program. The goal of AICUZ is to promote compatible land use on and off base to minimize noise complaints and safety hazards. Typical noise sources in and around the McGuire airfield include aircraft and human activities. Military aircraft operations are the primary sources of noise. The proposed activities will occur within the center of the loudest noise zone. Typically the planes approaching and departing from the McGuire airfield dB levels are in excess of 90 decibels (FAA, website, 2002). **Figure 3.4**, indicates the existing noise contours for the area surrounding the McGuire airfield.

The project would cause some limited construction related noise impacts to occur throughout the construction period. Noise impacts will range from chain saws, trucks, and other type of construction vehicles. The additional noise created by the Proposed Action will be limited to the “typical” work hours and are expected to occur within the current AICUZ range for the area.

Given the vehicle traffic, aircraft operations, and military training operations at and around McGuire, the ambient sound environment around McGuire is likely to resemble a noisy urban atmosphere.

3.8 Health and Safety

The health and safety of onsite military and civilian workers are safeguarded by numerous DOD and military-branch specific regulations designed to comply with standards issued by the Federal Occupational Safety and Health Administration (OSHA), USEPA, and state occupational safety and health agencies. These standards specify the amount and type of training required for industrial workers, the use of personal protective equipment, administrative controls, engineering controls, and maximum exposure limits for workplace stressors.

Construction site safety is largely a matter of adherence to regulatory requirements imposed for the benefit of employees and implementation of operational practices that reduce risks of illness, injury, death, and property damage. Safety hazards can often be identified and reduced or eliminated. Necessary elements for an accident prone situation or environment include the presence of the hazard itself together with the exposed (and possibly susceptible) population. The degree of exposure depends primarily on the proximity of the hazard to the population.

Flight safety at JB MDL is also addressed in JB MDL's BASH Reduction Plan. The BASH program identifies landscape management considerations to reduce the potential of aircraft accidents to wildlife strikes, both bird and mammal. Some of the BASH management considerations include elimination of roosting sites, grass height management, avoidance of landscape plantings (ie. avoidance of shelter and food sources), reduction of transition areas of habitat types and removal of dead vegetation.

Currently, JB MDL McGuire airfield is in violation of UFC 3-260-01. The safety issue was identified in the United States Air Force Air Traffic System Evaluation Report, McGuire May 2009 (**Appendix A**). The Evaluation Report states that the trees and vegetation are penetrating the runway approach/departure safety zones. Flight patterns and missions have been modified to accommodate the impacts to the safety zones infringements.

The vegetation within the safety zones is negatively affecting air flight safety by the impairment of the visual markers and increasing the likelihood of wild fires within the airfield safety areas.

Health and safety issues will also be considered for the workers removing the vegetation. The workers will adhere to a project specific Health and Safety Plan to assure that all vegetation is cut and removed in a safe manner. A chapter of the health and safety plan will address unexploded ordnance (UXO). The chapter will address what types of UXO could be observed and the procedures to follow if UXO is observed.

3.9 Installation Restoration Program (IRP)/Hazardous Materials and Waste Management

Hazardous materials and waste are materials that are dangerous or potentially harmful to our health or the environment. Hazardous wastes can be liquids, solids, gases, or sludge's. Hazardous materials and wastes are regulated by federal and state agencies.

The DOD developed the Installation Restoration Program (IRP), an element of the Defense Environmental Restoration Program. The IRP intent is to facilitate thorough investigation and cleanup of contaminated sites on military installations.

JB MDL currently has four IRP sites within the McGuire airfield area. The non-destructive inspection drain field (OT-14) is within the inner triangle of the McGuire airfield and three former fire training areas are within the McGuire airfield area (FT-08, FT-11 and FT-13). Site FTDX-19-7 is located south east of the McGuire airfield and outside the limits of the project area.

To prevent potential environmental hazard issues, JB MDL maintains a Pollution Prevention Plan. The objectives of this plan are to reduce or eliminate the impact of any operation or activity might have on the environment, through the reduction or elimination of wastes, more efficient use of raw materials or energy, and reduced emissions of toxic materials.

3.10 Land Use

Land uses in Burlington County are predominantly agricultural mixed with low-density residential and some light commercial use. Many small communities in the area serve as suburban areas to Philadelphia, located 45 miles southwest of the Base, and Trenton, located 18 miles north of the Base. The developed areas near the Base are in New Hanover, North Hanover Townships, and the Borough of Wrightstown.

The most prevalent land uses surrounding the JB MDL McGuire airfield are military use industrial and housing. Military installation land use functions are related to conducting the mission, such as; airfield, aircraft maintenance and flight operations facilities, industrial, storage, administration/offices, training/range areas, residential/housing, medical, outdoor recreation, and areas of open space.

In the context of aircraft operations, land use compatibility is also described in terms of safety/clearance zones and noise levels. Clear zones; accident potential zones; and runway, taxiway, and apron clearances are areas with restricted uses due to the aircraft operations.

3.11 Transportation/Traffic/Infrastructure

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area.

State Route 68, which connects the Base to the New Jersey Turnpike to the west, is the primary access road to this portion of the installation. The transportation network at JB MDL is composed of a series of improved and paved primary and secondary roads as well as a network of unimproved (dirt) tertiary roads.

The area of the Proposed Action is located within and surrounding the McGuire airfield; there is little to

no transportation/traffic within the area of proposed activities. The majority of the tree clearing will be to the south and east of the McGuire airfield in an area with no existing roadways. Construction vehicles and equipment needed for the Proposed Action would be kept in a designated area on site for the duration of the construction period, therefore, there would be no changes in transportation/traffic during the project. However, due to the location and nature of the proposed activities, there may be restrictions placed upon the work schedule and vehicle parking due to flight demands.

3.12 Socioeconomics and Environmental Justice

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly characteristics of population and economic activity. Economic activity typically encompasses employment, personal income, and industrial or commercial growth. Changes in these two fundamental socioeconomic indicators are typically accompanied by changes in other components, such as housing availability and the provision of public services. Socioeconomic data at county, state, and national levels permit characterization of baseline conditions in the context of regional, state, and national trends.

JB MDL is composed of three installations, McGuire AFB, Fort Dix, and NAES Lakehurst located in Burlington and Ocean Counties, NJ. The joint base covers approximately 42,000 acres and employees over 16,400 individuals. The area of the Proposed Action is located within and surrounding the McGuire airfield; currently the areas to be impacted do not contain housing and services for local populations. There would be no change in the number of personnel assigned to the JB MDL, therefore, there would be no changes in area population or associated changes in demand for housing and services. There would also be no change in facility operations following completion of the project. The proposed cutting and removal of trees to support the Proposed Action would occur on-installation.

The purpose of Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, is to identify, address, and avoid disproportionately high and adverse human health or environmental effects on minority and low-income populations. The executive order was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, tribal, and local programs and policies. The proposed activity is planned within an active military facility and therefore there will be no Environmental Justice issues.

4.0 POTENTIAL ENVIRONMENTAL IMPACTS

This section presents an evaluation of the environmental impacts that could result from implementing the Proposed Action or the No Action Alternative. This chapter focuses on impacts considered potentially significant. The general approach followed throughout this section is to briefly describe the range of impacts that would occur and provide a discussion of impacts that are considered significant.

The specific criteria for evaluating potential environmental effects of the Proposed Action or the No Action Alternative are also presented under each resource area. **Table 4-1** summarizes the comparisons of environmental consequences.

4.1 Airspace Management and Aircraft Safety

4.1.1 Evaluation Criteria

The significance of potential impacts on airspace management or air traffic depends on the degree to which the action would affect the airspace environment. Significant impacts could occur if the results of the action were to impose major restrictions on air commerce opportunities, significantly limit airspace access to a large number of users, or require modifications to ATC systems.

The flight safety issues that could result from implementation of the Proposed Action are evaluated based on the likelihood that the activity would negatively affect the safety of the public, military personnel, and property (both military and civilian). Flight safety concerns associated with the airspace for JB MDL include aircraft mishaps and BASH issues.

4.1.2 Proposed Action

Airspace Management. Impacts on airspace management are predicated on the extent to which the Proposed Action would affect air traffic in the vicinity of JB MDL airspace. There would be significant long term positive effects pertaining to use of the airspace under the Proposed Action due to the fact that the Proposed Action is to be performed to improve flight safety. Implementation of the Proposed Action would allow the continued use of current military airspace, and remove any major restrictions allowing the current aircraft to continue its flying missions. The clearing of trees will not allow for larger or more aircraft to use the runway therefore no additional impacts on the environment from flight operations is anticipated.

Aircraft Safety. Long-term, minor, adverse impacts on aircraft safety due to aircraft mishaps would be eliminated as a result of the Proposed Action. Implementation of the Proposed Action would result in allowing the base to stay on course with its current mission.

BASH issues already exist at JB MDL because the airspace adjacent to the installation is currently used by wildlife. There is always a possibility of bird and wildlife strikes whenever aircraft operate, especially when operating in close proximity to the wetlands and forested areas. With the continued implementation of the

Table 4-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative

Resources	Proposed Action	Alternative Action	No Action
Airspace Management and Aircraft Safety	Short-Term: minor management and safety impacts during construction. Long-Term: Significant positive impact. With continued "routine" vegetative management maintenance, the long term effects will be remain positively significant.	Short-Term: minor management and safety impacts during construction Long-Term: The long term effects would also be positive. However, the trees will continue to grow within the safety zones and maintenance will be an ongoing issue.	Short-Term: Significant negative impact, obstructions will not be removed from safety zones and the vegetation will continue to encroach upon the runways. Long-Term: Significant negative impact, obstructions will not be removed from safety zones and the vegetation will continue to encroach upon the runways.
Geology/Soil Resources	Short-Term: Potential minor impacts during site preparation and construction activities (e.g., tire rutting). Impacts would be minimized because erosion and siltation controls would be implemented. Long-Term: No impact.	Short-Term: Potential minor impacts during site preparation and construction activities (i.e., tire rutting). Impacts would be minimized because erosion and siltation controls would be implemented. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Air Quality	Short-Term: Minor, short-term impact from particulate matter and engine and equipment exhaust emissions generated during site preparation, and clearing activities. Long-Term: No impact.	Short-Term: Minor, short-term impact from particulate matter and engine and equipment exhaust emissions generated during site preparation, and clearing activities. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Water Resources			
Groundwater	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.	Short-Term: No impact. Long-Term: No impact.
Surface Water	Short-Term: Potential minor impacts during site preparation, and clearing activities. Impacts would be minimized because erosion and siltation controls would be implemented. Activities will not negatively affect floodplains. There will be no increase in impervious cover or elevation changes.	Short-Term: Potential minor impacts during site preparation, and clearing activities. Impacts would be minimized because erosion and siltation controls would be implemented. Activities will not negatively affect floodplains. There will be no increase in impervious cover or elevation changes.	Short-Term: No impact.
Surface Water cont.			

Table 4-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative

Resources	Proposed Action	Alternative Action	No Action
	Long-Term: No impact.	Long-Term: No impact.	Long-Term: No impact.
Cultural Resources	Short-Term: No adverse impacts.	Short-Term: No adverse impacts.	Short-Term: No impact.
	Long-Term: No adverse impacts.	Long-Term: No adverse impacts.	Long-Term: No impact.
Natural/Biological Resources			
Vegetation	Short-Term: Significant impacts to woody vegetation; woody vegetation will be clear cut and habitat converted to grass/emergent.	Short-Term: Significant impacts to woody vegetation; vegetation will be clear cut and topped/crop cut.	Short-Term: No impact.
	Long-Term: Nominal impact from loss of woody vegetation in safety zones; woody vegetation is common throughout the base and region. Areas which are currently forested will be converted to grassland or emergent wetlands.	Long-Term: Partially cut vegetation will reduce tree canopy and convert the forested areas to scrub shrub. Nominal impact from loss of vegetation; woody vegetation is common throughout the base and region. Areas that are cut will revert to grassland, emergent or scrub shrub habitat.	Long-Term: Vegetation will continue to grow and impair visual fight safety.
Wildlife	Short-Term: Potential impacts; seasonal cutting restrictions will minimize impacts to breeding migratory birds.	Short-Term: Potential impacts; seasonal cutting restrictions will minimize impacts to breeding migratory birds.	Short-Term: No impact.
	Long-Term: Minimal impacts. Wildlife will populate its preferred habitat. Species preferring woody edge habitat will relocate to preferred habitat. Wildlife preferring grassland/emergent habitat will move in to the area.	Long-Term: Minimal impacts. Wildlife will populate its preferred habitat. The angled cutting of the woody vegetation will create a variable habitat suitable for a wide variety of wildlife.	Long-Term: No impact.
Threatened and Endangered Species	Short-Term: Potential impacts; Pine Barrens tree frog and barred owl are two NJ list threatened species that have been observed within the Base but not directly in the	Short-Term: Potential impacts; Pine Barrens tree frog and barred owl are two NJ list threatened species that have been observed within the Base but not directly in the area to be	Short-Term: No impact.

Table 4-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative

Resources	Proposed Action	Alternative Action	No Action
	<p>area to be cut. Seasonal cutting restrictions will minimize impacts to breeding wildlife. The federally listed bog turtle is known to exist in the region however, no direct or indirect sightings have occurred within the area of disturbance. Implementation of proposed mitigation strategies will prevent adverse impact.</p> <p>Long-Term: No negative impact. Activities will increase potential grassland habitat preferred by the T & E grassland bird species known to exist within the airfield.</p>	<p>cut. Seasonal cutting restrictions will minimize impacts to breeding wildlife. The federally listed bog turtles are known to exist in the region however, no direct or indirect sightings have occurred within the area of disturbance. Implementation of proposed mitigation strategies will prevent adverse impact.</p> <p>Long-Term: No long term impacts are expected. Partially cut vegetation will reduce tree canopy and convert the forested areas to scrub shrub possibly creating improved tree frog bird habitat</p>	<p>Long-Term: No impact.</p>
Wetlands	<p>Short-Term: There will be no net loss of wetland acreage. Wetlands will be converted from palustrine forested wetlands to palustrine emergent wetlands.</p> <p>Long-Term: There will be no net loss of wetlands. Wetlands will be converted from palustrine forested wetlands to palustrine emergent wetlands. The conversion of wetlands will be insignificant compared to the importance of the proposed action.</p>	<p>Short-Term: There will be no net loss of wetland acreage. Wetlands will be converted from palustrine forested to palustrine emergent and scrub/shrub wetlands.</p> <p>Long-Term: There will be no net loss of wetlands. Wetlands will be converted from palustrine forested to palustrine emergent and scrub/shrub.</p>	<p>Short-Term: No impact.</p> <p>Long-Term: No impact.</p>
Noise	<p>Short-Term: Minor impacts on ambient noise from site preparation, and cutting activities. Impacts would be minor because these activities would be carried out during normal working hours in the vicinity of an active airfield, which already has elevated levels of noise.</p> <p>Long-Term: No impact.</p>	<p>Short-Term: Minor impacts on ambient noise from site preparation, and cutting activities. Impacts would be minor because these activities would be carried out during normal working hours in the vicinity of an active airfield, which already has elevated levels of noise.</p> <p>Long-Term: Potential continued minor impacts due to</p>	<p>Short-Term: No impact.</p> <p>Long-Term: No impact.</p>

Table 4-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative

Resources	Proposed Action	Alternative Action	No Action
		the type of equipment utilized during the ongoing maintenance of the vegetation. The impacts, if occur, would be minor since the activities will occur in areas with ongoing elevated noise levels.	
Health and Safety	<p>Short-Term: Potential impacts to workers during construction/cutting activities. Logging activities include lifting, climbing, and other strenuous activities. Falling branches, vines, and rough, muddy and slippery terrains are constant hazards. Poisonous plants, insects, snakes, heat, humidity and cold are other health and safety issues. Impacts would be minimized by adherence to safety standards. Low risk of fire/explosion hazards.</p> <p>Long-Term: Potential impacts to workers during ongoing cutting activities would be low and equivalent to that of routine grassland mowing activities. May increase BASH issues associated with waterfowl loafing</p>	<p>Short-Term: Potential impacts to workers during construction/cutting activities would be greater than that of the proposed activity due to the increased amount of individual tree climbing. Logging activities include lifting, climbing, and other strenuous activities. Falling branches, vines, and rough, muddy and slippery terrains are constant hazards. Poisonous plants, insects, snakes, heat, humidity and cold are other health and safety issues. Low risk of fire/explosion hazards. An increase risk would be associated with cutting vegetation at an angle. The partial cutting of vegetation will involve considerable climbing of trees, increasing risk of injury.</p> <p>Long-Term: Potential impacts due to the creation of different wildlife habitats and cover types may increase the potential of BASH incidences. An increased risk would also be associated with maintaining the angled cut vegetation.</p>	<p>Short-Term: No impact.</p> <p>Long-Term: Potential significant impacts due to reduced aircraft visibility and potential increases of BASH incidences.</p>
IRP/Hazardous Materials and Waste Management	Short-Term: Potential minor impacts during clearing activities. Impacts would be minimized because there are no earth moving activities proposed on or immediately adjacent to IRP sites. Any refueling activities will occur in predetermined fill zones and spill kits will be present.	Short-Term: Potential minor impacts during cutting activities. Impacts would be minimized because there are no earth moving activities proposed on or immediately adjacent to IRP sites. Any refueling activities will occur in predetermined fill zones and spill kits will be present.	Short-Term: No impact.
IRP/Hazardous Materials and Waste Management cont.			

Table 4-1
Comparison of Environmental Consequences
of the Proposed Action and Alternative

Resources	Proposed Action	Alternative Action	No Action
	Long-Term: No impact.	Long-Term: Potential impacts due to the greater frequency and type of equipment utilized during the ongoing maintenance of the vegetation.	Long-Term: No impact.
Land Use	Short-Term: No impact.	Short-Term: No impact.	Short-Term: No impact.
	Long-Term: No impact.	Long-Term: No impact.	Long-Term: No impact.
Transportation/Traffic/ Infrastructure	Short-Term: Nominal, intermittent impacts from construction traffic.	Short-Term: Nominal, intermittent impacts from construction traffic.	Short-Term: No impact.
	Long-Term: No impact.	Long-Term: Nominal, intermittent impacts from construction traffic.	Long-Term: No impact.
Socioeconomics/Environmental Justice	Short-Term: the crews working will have a positive impact to the local economy No Environmental Justice impacts are expected.	Short-Term: the crews working will have a positive impact to the local economy No Environmental Justice impacts are expected.	Short-Term: No impact.
	Long-Term: No impact.	Long-Term: the crews working will have a positive impact to the local economy No Environmental Justice impacts are expected.	Long-Term: No impact.

BASH Program at JB MDL conditions that could result in incidents involving bird/wildlife-aircraft strikes would be managed and minimized.

4.1.3 Alternative Action

The airspace management and aircraft safety in the alternative action would be similar to that of the Proposed Action. There would be significant long term positive effects pertaining to use of the airspace under the alternative action to improve flight safety. Implementation of the alternative action would allow the continued use of current military airspace, and remove any major restrictions on air commerce opportunities by allowing the current aircraft to continue its flying missions.

Long-term, minor, adverse impacts on aircraft safety due to aircraft mishaps would be eliminated as a result of the alternative action. Implementation of the alternative action would result in allowing the base to stay on course with its current mission.

BASH issues already exist at JB MDL because the airspace adjacent to the installation is currently used by wildlife. There is always a possibility of bird and wildlife strikes whenever aircraft operate, especially when operating in close proximity to the wetlands and forested areas. With the continued implementation of the BASH Program at JB MDL conditions that could result in incidents involving bird/wildlife-aircraft strikes would be managed and minimized.

4.1.4 No Action Alternative

The No Action Alternative would result in continuation of the reducing visibility and flight safety of the airspace conditions. Significant effects on airspace management and aircraft safety would be expected as a result of the Proposed Action not being implemented. The base will not be able to meet the mission flight requirements, over time more and more restrictions to aircraft would be implemented due to the reduction in flight visibility and height restrictions.

4.2 Geological/Soil Resources

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating potential effects of a Proposed Action on geological resources. Generally, adverse effects can be avoided or minimized if proper construction techniques, erosion-control measures, and structural engineering design are incorporated into project development.

Effects on geology and soils would be significant if they would alter the lithology, stratigraphy, and geological structures that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function (including prime farmland and other unique soils) within the environment.

4.2.1 Proposed Action

Long-term, negligible to minor impacts on soils would be expected from implementing the Proposed Action. The Proposed Action would not require disturbances to the existing soils. The activities include cutting of vegetation to less than 3 inches of the ground surface and grinding tree stumps to the ground surface. A total of 175 acres of vegetation would be cleared to comply with the Base's safety mission and requirements set forth in the UFC 3-260-01.

Clearing of vegetation would increase erosion and sedimentation potential. To minimize the potential of increased soil erosion; soil erosion and siltation control measures, including best management practices, would include the use of silt fencing, and/or straw bales adjacent to work areas. Sediment erosion controls (i.e. silt fence and hay bales) will be erected 25 feet from surface water and wetland features.

Whenever possible, vegetation will be cut and felled away from open water and drainage features. The proposed activities will require some use of heavy equipment and other vehicles. The vehicles required will be for the removal of cut and felled vegetation. The material will be mechanically dragged or hauled to a loading out area. Whenever possible, existing roads and trails will be utilized by the vehicles while moving of cut vegetation. If necessary, matting will be utilized to limit vehicle ground disturbance in wetter and softer soil areas.

As a result of implementing the Proposed Action, the Action would have minor impacts to soils from construction traffic and the cutting of the woody vegetation. The area will remain open and vegetated, it is anticipated that cutting of woody vegetation would have minor long-term, negligible impact on soil erosion and sedimentation. Soil erosion and sediment control measures would be included in site design plans to minimize long-term erosion and sediment production. Therefore, no significant adverse impacts on the soils at the site of the Proposed Action are anticipated.

4.2.2 Alternative Action

Under the Alternative Action the effects on the soil would be similar to that of the Proposed Action.

4.2.3 No Action

No effects would be expected. Implementation of the No Action Alternative would not entail any surface-disturbing activities at the sites being considered under the Proposed Action.

4.3 Air Quality

The Federal *de minimis* threshold emissions rates were established by USEPA in the General Conformity Rule to focus analysis requirements on those Federal actions with the potential to substantially affect air quality. For non-exempt actions that increase emissions above the *de minimis* levels, the Federal agency must demonstrate that the action will conform with the SIP or will not cause or contribute to any new violation of any standard in any area; interfere with provisions in the applicable SIP for maintenance of any standard; increase the frequency or severity of any existing violation of any standard; or delay timely attainment of any standard or any required interim emissions reductions or other milestone.

4.3.1 Proposed Action

An air permit would not be required for the construction and operation of the clear cutting of vegetation as it is under the “*de minimis*” standard and wood cutting equipment is not a significant source. The standard is addressed under NJAC 7:27-8 Appendix 1 tables A and B *de minimis* air contaminant sources.

In the short-term, there would be minor, negative impacts to air quality. Impacts from the cutting of vegetation could include the generation of fugitive dust and particulates from the cutting of vegetation and the addition of exhaust from construction vehicles. In addition, to mitigate for the loss of the carbon sink, tree seedlings will be handed out to the public for planting within the region.

4.3.2 Alternative Action

Under the Alternative Action the effects on the air quality would be similar to that of the Proposed Action.

4.3.3 No Action

Under the No Action Alternative, JB MDL would not implement the Proposed Action. The flight safety vegetation clearing would not occur and none of the construction activities described under the Proposed Action would occur. Therefore, no direct or indirect environmental effects would be expected on local or regional air quality from implementation of the No Action Alternative.

4.4 Water Resources

Evaluation criteria for analyzing effects on water resources are based on water availability, quality, and use; existence of floodplains; and associated regulations. A Proposed Action would have significant effects on water resources if it were to do one or more of the following:

- Reduce water availability or supply to existing users
- Cause overdraft of groundwater basins
- Exceed safe annual yield of water supply sources
- Adversely affect water quality in a substantial way
- Endanger public health by creating or worsening health hazard conditions
- Threaten or damage unique hydrologic characteristics
- Violate established laws or regulations adopted to protect water resources.

In addition, the potential effect of flood hazards on a Proposed Action is important if such an action occurs in an area with a high probability of flooding.

4.4.1 Proposed Action

Activities will occur in the vicinity of several streams, tributaries and headwaters. Tree clearing is proposed to occur in the areas surrounding Larkins Run, Jacks Run and tributaries to South Run. The proposed activities will not alter the drainage patterns, the permeability of the area soils or floodplain storage.

Negligible impacts to the stream and headwater floodplains are expected. The proposed activities will not alter existing topography or drainage features. There will be no increase in impervious surfaces, nor will any activities impact the permeability of the area. Filling and grading are not part of the Proposed Activities, therefore there will be negligible impact to flood storage. There will be negligible impacts to the amount or quality of groundwater/drinking water from the proposed activities.

4.4.2 Alternative Action

Under the Alternative Action, activities will occur in the vicinity of several streams, tributaries and headwaters. Tree clearing is proposed to occur in the areas surrounding Larkins Run, Jacks Run and tributaries to South Run. The proposed activities will not alter the drainage patterns, the permeability of the area soils or floodplain storage.

The proposed activity will not impact streams or headwater floodplains. The proposed activities will not alter existing topography or drainage features. There will be no increase in impervious surfaces, nor will any activities impact the permeability of the area. Filling and grading are not part of the proposed activities, therefore there will be no impact to flood storage. There will be no impacts to the amount or quality of groundwater/drinking water from the proposed activities.

4.4.3 No Action

Under the No Action alternative no water resources will be impacted.

4.5 Cultural Resources

Adverse impacts on cultural resources can include physically altering, damaging, or destroying all or part of a resource; altering characteristics of the surrounding environment that contribute to the resource's significance; introducing visual or audible elements that are out of character with the property or that alter its setting; neglecting the resource to the extent that it deteriorates or is destroyed; or the sale, transfer, or lease of the property out of agency ownership (or control) without adequate legally enforceable restrictions or conditions to ensure preservation of the property's historic significance.

4.5.1 Proposed Action

Over the years the planes, airfield and runways have been upgraded and expanded into the historic town of P ointville. The town was demolished, except for the cemetery along Texas Avenue; though archaeological remains are still present. No impacts to cultural resources are expected to occur under the proposed action due to vegetation cutting and removal. (See NJDEP's Historical Preservation Office February 2, 2011 Determination; Appendix C)

In the event that cultural items are encountered during project activities, work would cease immediately and the Base's Cultural Resources Manager would be contacted to assess the items.

4.5.2 Alternative Action

Under the Alternative Action the effects on the cultural resources would be similar to that of the Proposed Action.

4.5.3 No Action

Baseline conditions for cultural resources as described above would remain unchanged. Therefore, no significant impacts on cultural resources would occur as a result of the implementation of the No Action Alternative.

4.6 Natural Resources

This section provides the basis for comparison of the Proposed Action and the No Action Alternative. It describes the effects that the Proposed Action could potentially have on vegetation, wildlife, and wetlands resources.

Evaluation criteria typically used to determine the significance of an effect on biological resources include (1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource, (2) the proportion of the resource that would be affected relative to its occurrence in the region, (3) the sensitivity of the resource to proposed activities, and (4) the duration of ecological ramifications.

Adverse effects on biological resources are considered significant if species or habitats of high concern are adversely affected over relatively large areas, or if disturbances cause reductions in population size or distribution of species of high concern. A habitat perspective is used to provide a framework for analysis of general classes of effects (i.e., removal of critical habitat, noise, human disturbance).

As a requirement under the ESA, Federal agencies must provide documentation that ensures that agency actions will not adversely affect the existence of any Federal threatened or endangered species. The ESA requires that all Federal agencies avoid “taking” threatened or endangered species (which includes jeopardizing threatened or endangered species habitat). Section 7 of the ESA establishes a consultation process with USFWS that concludes with a USFWS concurrence on a determination of the risk to threatened and endangered species from the described project.

The Air Force has determined that an application to the Pinelands Commission for approval of this project would be incompatible with national defense requirements to have safety violations corrected as soon as possible. JB MDL has submitted a National Defense Exemption Letter (NDEL) to the Pinelands Commission (PLC) stating that the JB MDL is opting to wavier out of compliance with the PLC Management Plan requirements as cited in Part IV-Public Development, Section 7:50-4.52 (d) (**Appendix B**), this project is mission critical for national defense requirements.

4.6.1 Proposed Action

Vegetation. The vegetation types identified within the proposed clearing project include extensive areas of maintained grasslands (inner airfield), lawns, other landscaped areas (adjacent to buildings) and woodlands. Wooded areas in the vicinity consist of three basic types: sweet gum mix, mixed hardwoods and planted stands of pines. The woody vegetation within the safety zones would be cut to 3 inches of ground surface or less and removed. The immediate impacts to the woody vegetation would be severe,

there would be approximately 175 acres of woody vegetation removed. However, the long-term impacts to the region would be relatively minor since this vegetation is common to the Pine Barrens ecosystem.

An evaluation of the marketable value of the forest products on the APE has been made by natural resources staff at JB MDL. An amount equal to this valuation shall be paid by the contractors to the Air Force Forestry Account in accordance with the requirements of AFI 32-7064, DOD7000.14-R and 10 USC 2665. This determination will be forwarded to the Contract Administrator to be included in the contract specifications for compliance with AFI 32-7064 and DOD7000.14-R and 10 USC 2665.

Wildlife. Short-term and long-term, minor, direct and indirect, adverse effects on wildlife would be expected as a result of the Proposed Action. Wildlife that could be affected includes forest bird species, reptiles, amphibians, and mammals. No impacts to fish are expected.

The removal of approximately 175 acres of forest and other woody vegetation could result in direct adverse impacts on migratory birds. The New Jersey Landscape Project (www.state.nj.us/dep/gis) lists nearly 80 species of breeding migratory birds that occur in the vicinity of the Proposed Action site. The list includes the State-listed red-shouldered hawk (*Buteo lineatus*) and Cooper's hawk (*Accipiter cooperii*); the species of special concern spotted sandpiper (*Actitis macularia*); and other bird species of regional priority such as the American woodcock (*Philohela minor*), eastern kingbird (*Tyrannus tyrannus*), northern bobwhite (*Colinus virginianus*), blue-winged warbler (*Vermivora pinus*), prairie warbler (*Dendroica discolor*), pine warbler (*D. pinus*), hooded warbler (*Wilsonia citrina*), black-and-white warbler (*Miniotilta varia*), brown thrasher (*Toxostoma rufum*), black-billed cuckoo (*Coccyzus erythrophthalmus*), yellow-billed cuckoo (*C. americanus*), eastern towhee (*Pipilo erythrophthalmus*), scarlet tanager (*Piranga rubra*), chimney swift (*Chaetura pelagica*), and Virginia rail (*Rallus limicola*). In the September 21 2011 letter, the USFWS has requested a seasonal restriction on tree cutting between March 1 and July 31 to avoid impacts on breeding birds protected under the MBTA.

Noise created during woody vegetation cutting could result in short-term, direct and indirect, adverse effects on wildlife. These effects would include subtle, widespread effects from the overall elevation of ambient noise levels. This would result in reduced communication ranges, interference with predator/prey detection, or habitat avoidance. More intense effects would include behavioral change, disorientation, or hearing loss. Predictors of wildlife response to noise include noise type (i.e., continuous or intermittent), prior experience with noise, proximity to a noise source, stage in the breeding cycle, activity, age, and sex composition. Prior experience with noise is the most important factor in the response of wildlife to noise, because wildlife can become accustomed (or habituate) to the noise. The rate of habituation to short-term construction is not known. Wildlife could be permanently displaced from the areas where the habitat is cleared and temporarily dispersed from areas adjacent to the project areas during construction periods.

Threatened and Endangered Species. Surveys for endangered and threatened species conducted at McGuire identified breeding populations of upland sandpiper, savannah sparrow, and grasshopper

sparrow, within the maintained grassland community in the inner McGuire airfield. No cutting will occur in the infield area of the airfield therefore no adverse impact will occur to the species in that area. The proposed activity will potentially increase the grassland habitat for the known threatened and endangered bird species. Since safety zone heights are important for safety of the flying mission, efforts must be taken to ensure that operational needs and wildlife ecology needs are compatible.

Surveys conducted between 1993 and 1995 indicated several threatened and endangered species were identified on the base. The state endangered pied bill grebe (*Podilymbus podiceps*) was identified on Base and the Pine Barrens tree frog (*Hyla andersonii*), was identified approximately one mile south east of the proposed work area. During the survey barred owls (*Strix varia*) were also detected. Additional barred owl surveys were performed in 2007 and 2008, by Environment and Engineering, Inc. for Fort Dix. The 2008 survey revealed the presence of barred owls in three locations on Base but not within area of disturbance.

The 2011 bog turtle survey concluded with no direct or indirect observations. However, one wetland area reviewed did contain proper habitat. JB MDL will use BMP's while performing the preferred action to assure that impacts to wetlands and thus bog turtle habitat are minimized, as requested in the September 21, 2011 USFWS letter. All wetland areas will be surrounded with erosion controls to minimize stormwater runoff impacts. The contractor performing the action will also provide a Qualified Bog Turtle Surveyor to monitor the activities when working around the potential habitat.

Since 2000, a pair of bald eagles has been nesting near the Monmouth County border. Though the bald eagle does not nest in the study area, the potential exists for foraging in the area. The eagles are known to forage approximately 1 mile east of the study area at Brindle Lake, and therefore no impacts to the bald eagle are expected.

There are potential short and long term impacts to several species, including the barred owl and the Pine Barrens tree frog, which rely upon the forested ecosystems in the region. These impacts will be minimized by the donation of seedlings to be planted to create additional habitat within the region.

Wetlands. Under the Proposed Action long-term and short-term impacts on wetlands is minimized by using BMPs. To meet the Base's safety mission and requirements set forth in the UFC 3-260-01, it is proposed that a total of 152 acres of forested and scrub/shrub wetlands will be converted to emergent wetlands. Approximately 60 acres of emergent/open water wetlands are within the project area will not be disturbed. While there are vernal pools found on JB MDL, recent surveys have shown that no vernal pools are located in the wetland areas to be disturbed. Fifteen acres of scrub/shrub and 137 acres of forested wetlands were identified within the primary surfaces, clear zones and transitional slopes on JB MDL property and will be cut.

No wetlands will be lost due to this action. However, habitat conversion will occur and species composition will change. This change in species composition will equally benefit some species and stress

others. However, when reviewed in the larger regional setting the overall benefits and impacts will be insignificant.

4.6.2 Alternative Action

Under the Alternative Action the effects on the natural resources would be similar to that of the Proposed Action.

However, this alternative will not create additional grassland habitat but scrub-shrub habitats or plant communities which will result in a potentially higher plant and animal diversity. The increase in diversity may have a negative effect on the safety of the flying mission by increasing the likelihood of BASH incidences.

4.6.3 No Action

The No Action alternative would allow for the continued growth of woody vegetation. The increase in woody vegetation height would further impair flight sight; negatively affecting the safety of the flying mission. There would be no change to existing impacts on biotic communities (vegetation, wildlife and wetlands).

4.7 Noise

Noise impact analyses typically evaluate potential changes to the existing noise environment that would result from implementation of a Proposed Action. Projected noise effects were evaluated qualitatively for the alternatives considered.

4.7.1 Proposed Action

Because the project site is located on an active McGuire airfield, where loud noise levels associated with aircraft are experienced daily, minimal impacts on ambient noise levels from the work area would result from the operation of chain saws, heavy machinery and equipment. Impacts would be minor and only short term; these activities would be carried out during normal working hours within the airfield.

4.7.2 Alternative Action

Under the Alternative Action the effects on the noise resources would be similar to that of the Proposed Action. During yearly maintenance activities the ambient noise levels will be impacted by the continued use of chain saws and heavy equipment usage.

4.7.3 No Action

Under the No Action Alternative, the Proposed Action would not be implemented. There would not be an increase in clearing activities or vehicle operations; consequently, the ambient noise environment would not change from existing conditions.

4.8 Health and Safety

If implementation of the Proposed Action were to increase risks associated with the safety of construction personnel, contractors, military personnel, or the local community, or hinder the ability to respond to an emergency, it would represent an adverse impact. Impacts were assessed based on the potential effects of tree clearing and flight safety (Airspace Management and Aircraft Safety section).

4.8.1 Proposed Action

Contractor Safety. Short-term, major, adverse effects on contractor safety would be expected. The Proposed Action would increase the short-term risk associated with tree clearing contractors performing work. Minor health and safety issues are associated with tree cutting activities as long as the Health and Safety Plans are followed. Worker safety concerns during construction activities would primarily include physical hazards associated with heavy equipment, vehicles, power tools, lifting, climbing and other strenuous activities. Falling branches, vines, and rough terrains are constant hazards, as well as slippery or muddy ground, hidden roots and vines. Other potential hazards include poisonous plants, brambles, insects, snakes, weather (heat, extreme cold, humidity and rain), and potential hazardous materials (e.g., fuels).

Because construction workers for the proposed vegetation clearing would be responsible for complying with standard operating procedures and applicable health and safety regulations, no impacts to health and safety would be expected. Also, impacts to health and safety of nearby personnel would be minimized by clearly identifying the work zone and prohibiting access to unauthorized individuals.

The Joint Base Civil Engineer Squadron would be responsible for ensuring that all contractors are informed of the facility-appropriate hazardous materials and waste procedures, including UXO and coordinate the use of hazardous materials and wastes with the installation Hazardous Waste Program Manager and Hazardous Waste Materials Coordinator.

Military Personnel Safety. Short-term, minor, adverse and long-term, major, beneficial effects on military personnel safety would be expected. Short-term effects are due to potential timing limitations on flight training during woody vegetation cutting and removal; though some flights are currently limited due to the height of existing vegetation.

In the long run, the proposed activities would reduce potential accidents within the safety zones. The removal of the woody vegetation within the flight safety areas would allow for additional training and would ultimately result in airmen that are better prepared for deployment. The proposed activity would comply with the AICUZ program and the Base's BASH Reduction Plan. For these reasons, the Proposed Action would closely adhere to the Base's safety mission, requiring these areas to remain cleared, or undeveloped, as much as possible while discouraging birds and mammals from using McGuire airfields by removing attractive habitat features.

4.8.2 Alternative Action

Under the Alternative Action the effects on health and safety resources would generally be similar to that of the Proposed Action, with the exception of the times during the required maintenance. Worker safety concerns for the alternative action are elevated, compared to the Proposed Action, due to the angled tree cutting activities and the additional risk of workers repeatedly climbing the trees instead of just felling them on the ground.

The proposed activity would comply with the AICUZ program. For this reason, the alternative action would adhere to the base's mission. This alternative, however, would create a vegetative edge effect by introducing varying heights of vegetation and creating potential habitat for many bird and mammal species. Types and varying heights of vegetation are highly attractive to wildlife. Because wildlife would be attracted to this angled vegetation the incidences of BASH would increase. Therefore, this alternative action would have a significant negative effect on Health and Safety and general flight safety.

4.8.3 No Action

Under the No Action alternative there would be no worker safety concerns, no physical hazards from use of heavy equipment, vehicles, power tools, etc. and no potential contact with hazardous materials. However, vegetation will continue to grow and become a greater threat to the flight plane line of sight and not allow the Base to continue its mission in a safe manner. Therefore, the No Action alternative will also have a significant negative effect on Health and Safety.

4.9 Installation Restoration Program (IRP)/Hazardous Waste and Waste Management

Impacts on pollution prevention would be considered significant if a Proposed Action resulted in worker, resident, or visitor exposure to these materials, or if the action generated quantities of these materials beyond the capability of current management procedures. Impacts on hazardous materials management would be considered significant if the Federal action resulted in noncompliance with applicable Federal and NJDEP regulations, or increased the amounts generated or procured beyond current JB MDL waste management procedures and capacities. Impacts on the ERP/IRP sites would be considered significant if the Federal action disturbed (or created) contaminated sites resulting in adverse effects on human health or the environment.

4.9.1 Proposed Action

Direct and indirect, short-term, minor, adverse impacts on the Pollution Prevention Program at JB MDL would be expected. Most tree clearing practices do not call for the use of hazardous materials; however, the use of petroleum products (fuel for chain saws and construction vehicles) would be expected during this time for a short period. The Pollution Prevention Program for the Base would accommodate the Proposed Action.

Adherence to these plans would mitigate or attenuate any significant adverse impacts resulting from the proposed construction projects. BMPs at construction sites would result in less of an impact on the natural environment.

No effects on hazardous materials management during tree clearing would be expected. Products containing hazardous materials would be procured and used during the proposed cutting activities in accordance with practices established at JB MDL and their hazardous materials procurement mechanism. Contractors would be responsible for the management of hazardous materials, which would be handled in accordance with Federal and State regulations.

No effects on the hazardous waste management program would be expected from the tree clearing activities. It is anticipated that the quantity of hazardous wastes generated from proposed tree clearing would be negligible. Contractors would be responsible for the disposal of hazardous wastes in accordance with Federal and State laws and regulations, as well as the installations' Hazardous Waste Management Plan. BMPs would be followed to ensure that contamination from a spill would not occur. If, however, a spill occurs, the SPCC Plan outlines the appropriate measures for spill situations.

There are several IRP sites within the McGuire airfield area including the former fire training areas, jet fuel and de icing tanks. The sites are either within the inner triangle or in areas where no clearing activities are proposed. Though these IRP sites are within the safety zone areas, no impacts are expected under the Proposed Action. In the unlikely event that contaminated material is encountered the JB MDL's IRP POC will be immediately contacted.

4.9.2 Alternative Action

Under the Alternative Action the effects would be similar to that of the Proposed Action.

4.9.3 No Action

The No Action Alternative would result in no change to the existing hazardous materials and waste management conditions. No additional effects on hazardous materials and waste management would be expected as a result of the Proposed Action not being implemented.

4.10 Land Use

4.10.1 Proposed Action

There is little potential for the Proposed Action to have a disproportionately adverse effect on land use in Burlington County. There would be no land use ramifications resulting from the Proposed Action. Land use patterns would not change. The majority of the land area to be cleared is unimproved. Due to safety concerns the area needs to remain unimproved, therefore, the Proposed Action would have no impact on future land use.

However, in the context of aircraft operations, land use in terms of safety/clearance zones would have a significant positive impact. Clear/safety zones will be free of visual obstacles, currently, the airfield

safety zones are inadequate and have a potential for great health and safety threat and do not meet the mission requirements. By clearing the vegetation within the safety zones the area would be free of obstructions. This action would meet the increased mission requirements and would be in accordance with UFC 3-260-01, allowing the military to meet its flight safety mission requirements, thus improving long-term productivity of JB MDL.

4.10.2 Alternative Action

Under the Alternative Action the effects on the land use would be similar to that of the Proposed Action. The safety zones of the airfield would have the minimum amount of visual clearance required under the UFC-3-260-01 regulation.

4.10.3 No Action

The No Action alternative would have a detrimental impact on land use. The safety zones of the airfield would not meet the visual clearance criteria required for the current aircraft under the UFC-3-260-01 regulation.

4.11 Transportation/Traffic/Infrastructure

Effects on infrastructure are evaluated for their potential to disrupt or improve existing levels of service and create additional needs for transportation patterns. Impacts might arise from physical changes to traffic circulation, construction activities.

4.11.1 Proposed Action

Short-term, negligible, adverse effects on JB MDL's transportation systems would be expected as a result of the construction of the Proposed Action. Although most construction vehicles and equipment needed for the construction of the Proposed Action would be kept on site for the duration of the construction period, which would limit the adverse effects, construction activities would temporarily increase the usage of the installation's roadways and parking areas. However, the increase in traffic from the construction of the Proposed Action would be negligible compared to the current total traffic volume at JB MDL. Due to the location and nature of the proposed activities, there may be restrictions placed upon the work schedule and vehicle parking due to flying demands.

The Proposed Action would improve Long-term conditions to the air traffic. The Proposed Action will allow for larger aircraft to utilize the current runways. However, the number of automobiles and other vehicles added to the roads from the Proposed Action would be minimal, any increases in traffic and road deterioration rates would be negligible.

4.11.2 Alternative Action

Under the Alternative Action the effects on the transportation/traffic would be similar to that of the Proposed Action.

4.11.3 No Action

The No Action Alternative would have no effect on transportation/traffic. The No Action Alternative would result in continuation of the existing conditions of infrastructure resources. No additional effects on infrastructure resources would be expected as a result of the Proposed Action not being implemented. However, with the continued growth of vegetation additional restrictions to air traffic will be implemented.

4.12 Socioeconomics and Environmental Justice

Construction expenditure impacts are assessed in terms of direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts can vary greatly, depending on the location of a Proposed Action. The Proposed Action could have a significant effect with respect to the socioeconomic conditions in the surrounding Region of Influence (ROI) if it were to result in the following:

- Change the local business volume, employment, personal income, or population that exceeds the ROI's historical annual change
- Adversely affect social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates.

4.12.1 Proposed Action

There is little potential for the Proposed Action to have a disproportionately high adverse human health or environmental effect on low-income and minority populations. There would be no substantial economic ramifications resulting from the Proposed Action. The tree clearing will be completed over a short term four month schedule and thus new employment associated with the Proposed Action would not have a significant regional effect on personal income, poverty levels, or other demographic employment indicators. However, nominal, temporary socioeconomic impacts will occur due to the employment of a contractor to complete the Action. The Contractors will require gasoline and food and other supplies which will have a positive benefit to the local community..

4.12.2 Alternative Action

Under the Alternative Action the effects on the socioeconomics and environmental justice would be similar to that of the Proposed Action.

4.12.3 No Action

The No Action Alternative would result in continuation of the existing socioeconomic and environmental justice conditions. However, with the continued growth of vegetation additional flight and mission limitations would occur; reducing the abilities of the Base and the possible closure of the McGuire airfield, as a result of the Proposed Action not being implemented.

4.13 Cumulative Impacts

Cumulative impacts on environmental resources result from incremental effects of Proposed Actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decision making is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Cumulative effects are those which may result from the incremental impact of the federal action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such actions (See 40 CFR § 1508.7).

In February 2010, an EA addressing the “Hardening of Overruns for Runway 06/24 at JB MDL” was completed. This Action was completed in July 2011 and had minimal if any environmental impacts. In addition, a Flight Activity Facility to be located at the approach of Runway 24 is under consideration. This project is in the preliminary planning stages and should have minimal environmental impacts if constructed.

Therefore, the cumulative impacts from the projects either recently completed or proposed should be negligible.

4.14 Unavoidable Adverse Effects

If the Proposed Action were implemented, impacts to vegetation, wetlands and wildlife would be unavoidable. The woody vegetation is common to the base and surrounding region. Forested areas would be converted to grassland/emergent habitat, increasing available land to the known threatened and endangered grassland bird species in the area.

The known threatened and endangered bird species and the preferred habitat will not be directly impacted during clearing activities. Other potential threatened and endangered species, the Pine Barrens tree frog, barred owl and American bald eagle, have been historically observed within 1 mile or more of the proposed activities and should not be directly impacted from the proposed clearing activities.

4.15 Compatibility of the Proposed Action and Alternatives with the Objectives of Federal, Regional, State, and Local Land Use Plans, Policies, and Controls

Impacts on the ground surface as a result of the Proposed Action would occur entirely within the boundaries of JB MDL. The proposed clearing activities would not result in incompatible land use changes on or off the installation. The Proposed Action would not conflict with any applicable off installation land use ordinances or designated clear zones.

4.16 Relationship of Short-Term Uses and Long-Term Productivity

Short-term uses of the biophysical components of the human environment include direct construction related disturbances and direct impacts associated with an increase in population and activity that occurs over a period of less than 5 years. Long-term uses of the human environment include those impacts occurring over a period of more than 5 years, including permanent resource loss. The short-term impact of resources, altering of the vegetative habitats, will improve long-term productivity.

Currently, the McGuire airfield safety zones are inadequate and have a potential for great health and safety threat and do not meet the mission requirements. By clearing the vegetation within the safety zones the area would be free of obstructions. This action would meet the increased mission requirements and would be in accordance with UFC 3-260-01, allowing the military to meet its flight safety mission requirements, thus improving long-term productivity of JB MDL.

The Proposed Action would not result in significant intensification of land use at JB MDL or in the surrounding area. The areas to be cut are considered open space and will remain as open space at the conclusion of the project.

4.17 Irreversible and Irretrievable Commitments of Resources

CEQ regulations in 40 CFR 1502.16 require that an agency identify any irreversible or irretrievable commitments of resources that would be involved in the Proposed Action, should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). The irreversible and irretrievable commitments of resources that would result from implementation of the Proposed Action involve capital, energy, materials, and labor required for the cutting of the vegetation. The uses of these resources are considered to be permanent and are not retrievable.

Material Resources. The largest direct loss of resources to JB MDL is the loss of trees and potential firewood. A review of the firewood potential was conducted and it was determined that the firewood value of the trees harvested from this project were valued at \$38,600 (Appendix F). Other material resources utilized for the Proposed Action include primarily petroleum products for fuel. Most of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), propane, and electricity. During vegetation clearing, gasoline and diesel would be used for the operation of chainsaws and construction vehicles. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Biological Habitat. The Proposed Action would result in loss of woody vegetation and habitat conversion from forested wetlands to emergent wetlands but there would be no net loss of wetlands. Though a significant amount of trees will be cleared for flight safety, no other biological changes will occur.

Human Resources. The use of human resources for vegetation clearing is considered an irretrievable loss only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities and is considered beneficial.

Greenhouse Gases. Greenhouse gases include water vapor, carbon dioxide, methane, nitrous oxide, ozone, and halocarbons. Of the listed greenhouse gases, carbon dioxide is the most prevalently emitted from manmade uses, including internal combustion engines and burning of other fuel materials. For this action the greenhouse gases would be associated with the woody vegetation clearing. The addition of the greenhouse gases resulting from the cutting of the woody vegetation would result in a negligible impact on the generation of greenhouse gases and climate change. To mitigate any losses of the carbon sink, tree seedlings will be distributed to the surrounding areas on earth day to promote re-vegetation in the region.

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LIST OF PERSONS CONTACTED

Several persons were contacted or consulted during the preparation of the EA, the persons contacted are listed below:

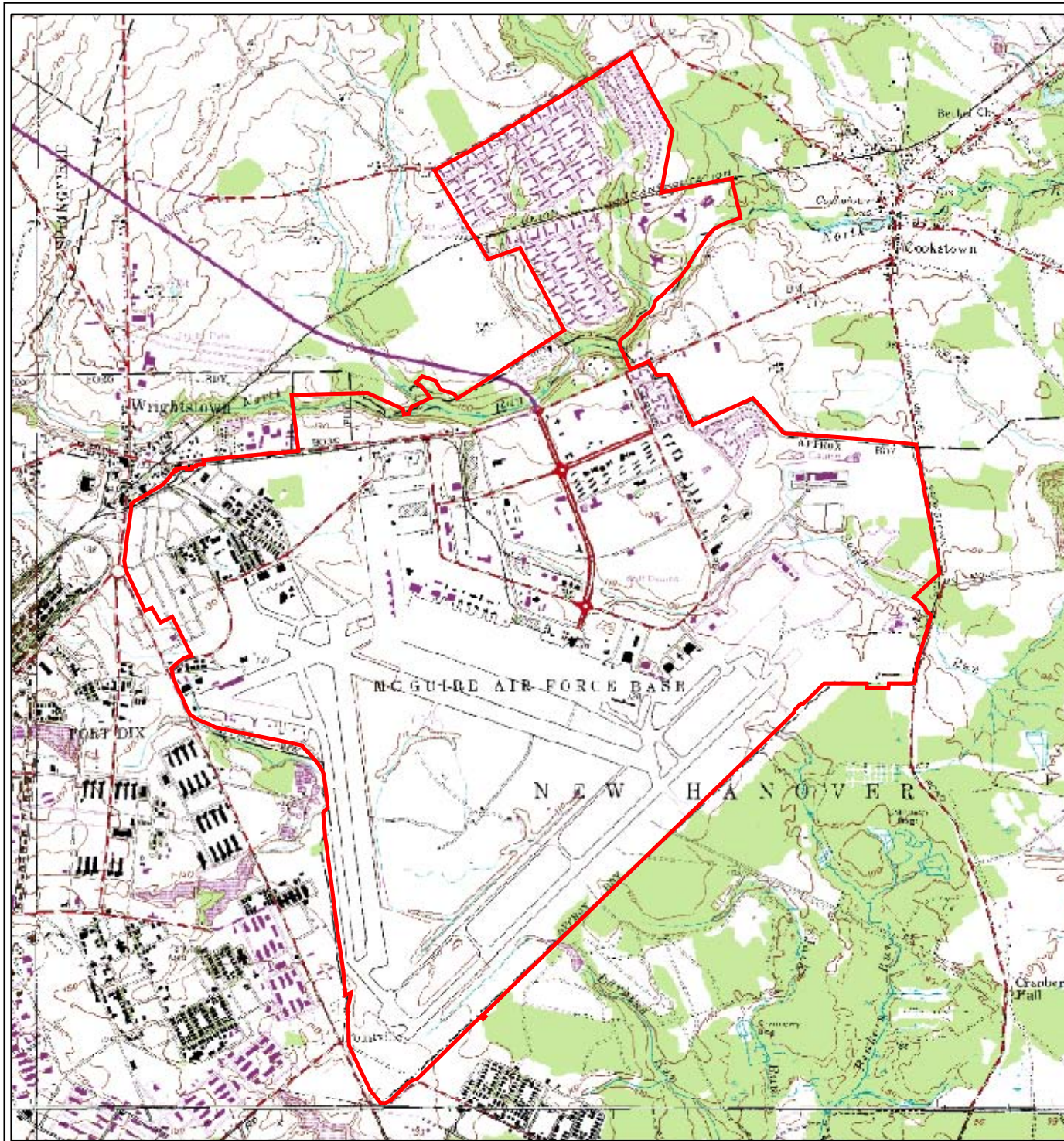
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REFERENCES

- Armento, Jennifer, 2008, Biological Assessment Barred Owl, Environment & Engineering Inc., Virginia Beach, VA, December.
- Federal Interagency Committee for Wetland Delineation. 1989. *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*. U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S.D.A. Soil Conservation Service, Washington, D.C. Cooperative technical publication
- Fort Dix Army Installation, 2009, Integrated Natural Resources Management Plan, U.S. Army Garrison Fort Dix, New Jersey, August.
- Fort Dix Army Installation, 2002, Biological Assessment for Bald Eagles, September.
- McGuire Air Force Base, 2001, Final Integrated Natural Resources Management Plan, McGuire Air Force Base, New Jersey, November.
- McGuire Air Force Base, 2003 rev. 2004, Integrated Cultural Resources Management Plan, July.
- McGuire Air Force Base, 2003 amended 2004, Vegetation Management Plan for McGuire AFB, April.
- McGuire Air Force Base, 2001, Bird/Wildlife Aircraft Strike Hazard Plan, August
- New Jersey Department of Environmental Protection, Water Allocation Permit #2236P, 1997.
- New Jersey Division of Fish, Game and Wildlife, Endangered and Nongame Species Program, 1996, Fort Dix Military Reservation Rare Species Survey, February.
- New Jersey Pinelands Commission, 2009, The New Jersey Pinelands Commission Comprehensive Management Plan http://www.state.nj.us/pinelands/images/pdf%20files/04_06_09_CMP.pdf
- Phase I Bog Turtle Habitat Evaluations and Wetland Surveys at Joint Base McGuire-Dix-Lakehurst (McGuire Air Force Base) Burlington County, New Jersey Final Report HA File NJ2011.45 Herpetological Associates, Inc August 23, 2011.
- U.S. Department of Agriculture, Soil Conservation Service (USDA-SCS), 1971, Soil Survey of Burlington County, New Jersey, Sheets 25, 26, 32 and 33.
- U.S. Department of Environmental Protection, 1988, Volume 53, No. 122, Page 23791, Sole Source Aquifer Determination for the New Jersey Coastal Plain Aquifer System
- <http://www.dtic.mil/whs/directives/corres/text/i416557p.txt>
http://www.dtic.mil/whs/directives/corres/pdf/i416557_110877/i416557p.pdf
<https://www.denix.osd.mil/denix/Public/Policy/Marine/5090.2A/appenj-k.html>
http://www.faa.gov/regulations_policies/faa_regulations/

http://www.state.nj.us/dep/watershedmgt/wma19_info.htm
<http://www.nj.gov/dep/landuse/7-7a.pdf>
http://www.wbdg.org/ccb/DOD/UFC/ufc_3_260_01.pdf
<http://www.state.nj.us/dep/gis/depsplash.htm#>
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<http://vlex.com/vid/sec-sale-certain-interests-land-logs-19221731>
http://www.afpmb.org/military_entomology/usafento/files/afi32-7064.pdf
<http://www.asha.org/public/hearing/Noise/>
<http://epa.gov/airquality/greenbk/>

Figures



Legend

 McGuire Area

Notes:

- 1) USGS Topographic image obtained from TerraServer.



Scale:

0 1,500 3,000 6,000 Feet

REFERENCE/PROJECTION: New Jersey State Plane, NAD 83, Feet

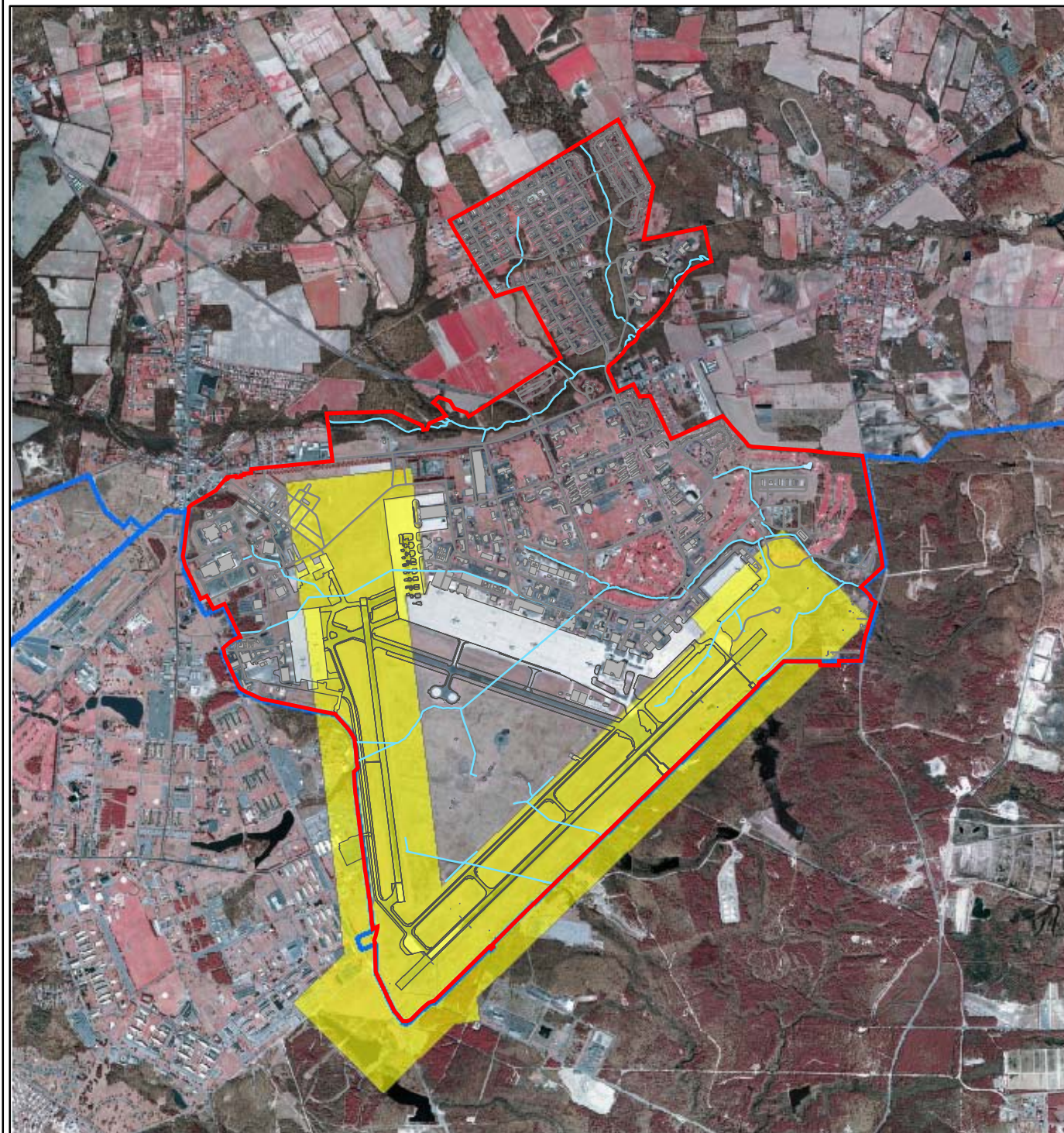
FIGURE 1-1

USGS General Location Map
Joint Base McGuire-Dix-Lakehurst
McGuire Area
Burlington County, New Jersey

 Shaw Environmental, Inc.

GIS File: MCGAFB_001_Fig1-1_USGS.mxd

Date: 1/17/11



Legend

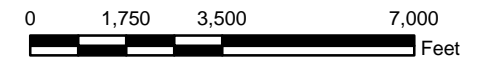
- Stream
- Road Centerline
- Building
- Water Body
- Airfield Surface Boundary
- Study Area
- McGuire Area
- Dix Area

Notes:

- 1) Aerial photo obtained from McGuire AFB; the photo is dated 2002.



Scale:



REFERENCE/PROJECTION: New Jersey State Plane, NAD 83, Feet

FIGURE 1-2

Project Area Map

*Joint Base McGuire-Dix-Lakehurst
McGuire Area
Burlington County, New Jersey*



GIS File: MCGAFB_005_Fig1-2_Project_Area.mxd Date: 3/3/11



Legend

- Stream
- Road Centerline
- Water Body
- Building
- Airfield Surface Boundary
- McGuire Area
- Dix Area

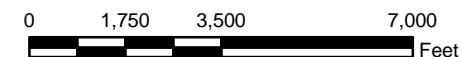
Airfield Safety Zones

- Clear Zone
- Primary Surface
- Transitional Slope
- Threshold/Overrun

Notes:

- 1) Aerial photo obtained from McGuire AFB; the photo is dated 2002.

Scale:



REFERENCE/PROJECTION: New Jersey State Plane, NAD 83, Feet

FIGURE 2-1

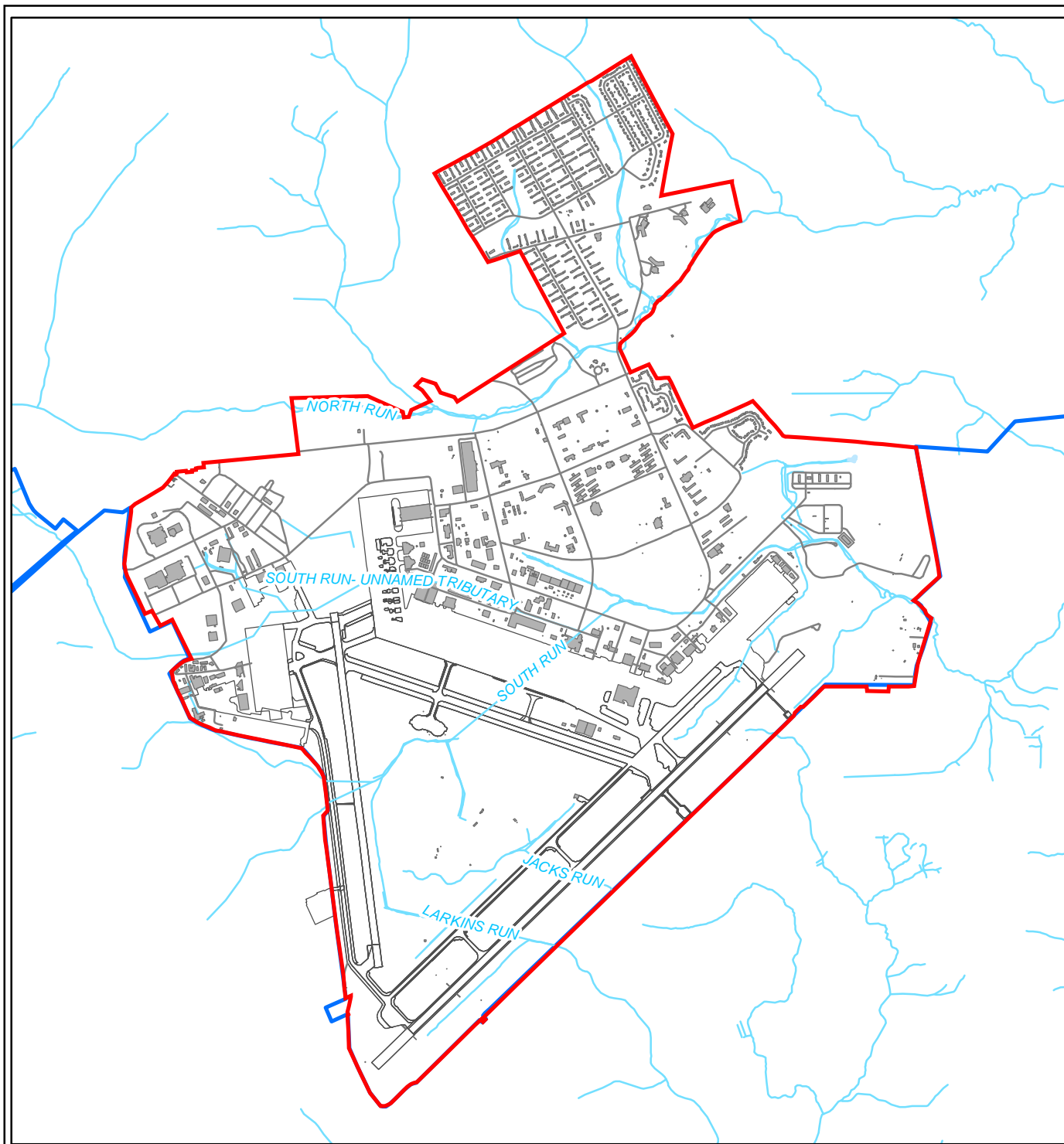
Airfield Safety Zones Map

*Joint Base McGuire-Dix-Lakehurst
McGuire Area
Burlington County, New Jersey*



GIS File: MCGAFB_010_Fig2-1_Airfield_Safety_Zones.mxd

Date: 1/17/11

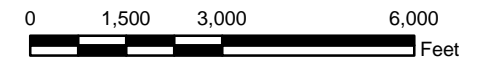


Legend

- McGuire Area
- Road Centerline
- Stream
- Building
- Airfield Surface Boundary
- Water Body
- Dix Area



Scale:



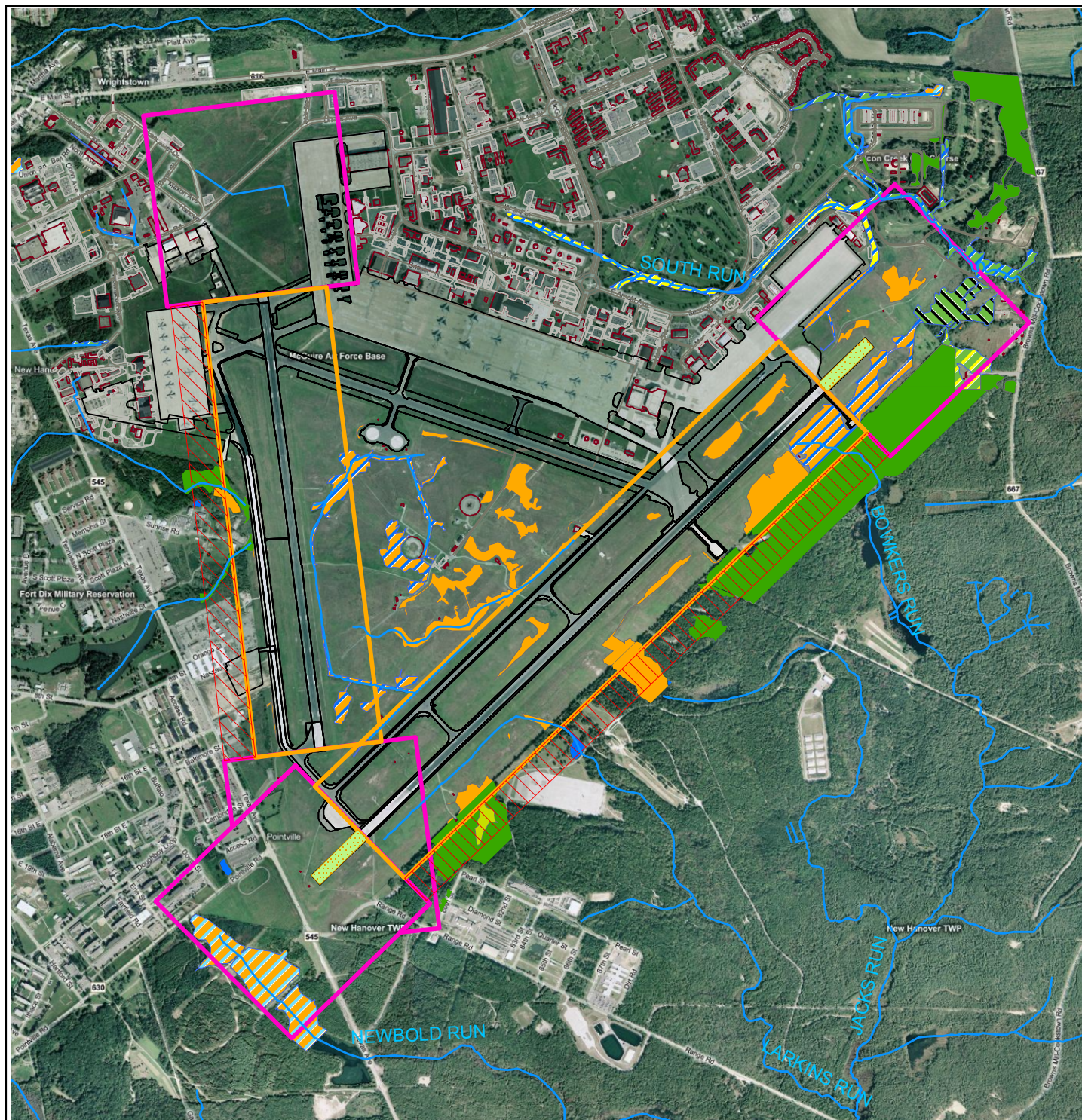
REFERENCE/PROJECTION: New Jersey State Plane, NAD 83, Feet

FIGURE 3-2
Drainage Areas Map
 McGuire Air Force Base
 Burlington County, New Jersey

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GIS File: MCGAFB_003_Fig3-1_Soils.mxd

Date: 7/14/06



Legend

Streams

Airfield Safety Zones

Clear Zone

Primary Surface

Threshold/Overrun

Transitional Slope

2005-2006 Field Delineated Wetlands

Palustrine Emergent Wetland (PEM)

Upland Area Inside Wetlands

Palustrine Emergent/Open Water Wetland (PEM/POW)

Palustrine Emergent/Riverine Wetland (PEM/R)

Palustrine Forested Wetland (PFO)

Palustrine Forested/Riverine Wetland (PFO/R)

Palustrine Forested/Scrub Shrub Wetland (PFO/PSS)

Palustrine Forested-Scrub Shrub/Riverine Wetland (PFO/PSS/R)

Palustrine Scrub Shrub/Riverine Wetland (PSS/R)

Riverine (R)/Open Water



MAP SOURCES:

1. 2005 FIELD DELINEATED WETLANDS

2. WETLANDS POINTS WERE FLAGGED BY SHAW ENVIRONMENTAL & INFRASTRUCTURE AND FIELD LOCATED BY MASER CONSULTING P.A. IN AUGUST & SEPTEMBER OF 2006.

3. MS VIRTUAL EARTH AERIAL

Scale:

2,000 1,000 0 2,000 Feet

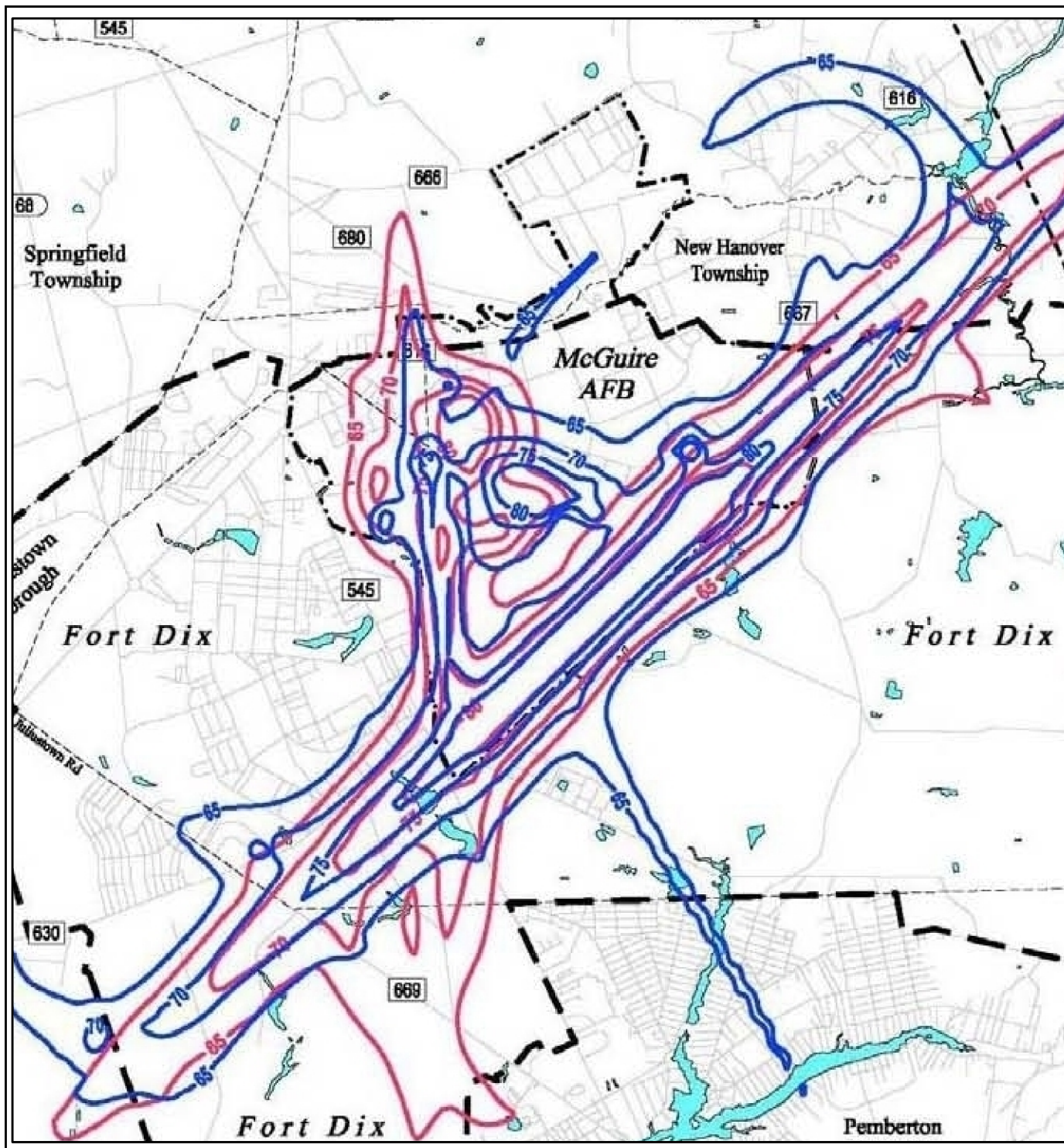
REFERENCE/PROJECTION: New Jersey State Plane, NAD 83, Feet

Wetlands Map

McGuire Air Force Base
Burlington County, New Jersey



GIS File: McGuire -Wetlands Airfield Area-A size.mxd Date: 3/01/11



LEGEND

- | | |
|-----------------------|-----------------------|
| — 1999 Noise Contours | - - - Dix Area |
| — 2008 Noise Contours | — Roadway |
| - - - McGuire Area | — Municipality Limits |
| | — Runway |

FIGURE 3-4
AICUZ Contour Map
Joint Base McGuire Dix Lakehurst Base
McGuire Area
Burlington County, New Jersey

Appendix A

USAF Air Traffic Systems Evaluation Report

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UNITED STATES AIR FORCE



AIR TRAFFIC SYSTEM EVALUATION REPORT

McGuire AFB
04 - 08 May 09

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USAF ATSEP TEAM COMPOSITION

Mr. Joe Hart
AMC Civil Engineering
AMC/A7PI

Maj Joseph Rojas
Team Executive Officer
AMC

Mrs. Kim Outman
AMC TERPS
AMC/A3AT

Mr. Charles Langdon
AMC Airfield Ops and Procedures
AMC/A3AP

CMSgt Athena Cody
AMC Airfield Ops and Procedures
AMC/A3AP

Mr. Jim Krogh
AMC Airspace Manager
AMC/A3AA

Mr. James Knight
AFFSA Airfield Management
AFFSA/A3AV

Mr. Gregory Williams
AMC Airfield Ops and Procedures
AMC/A3AP

Mr. Anthony Hines
ATC Automation
ACC/A3AO

SMSgt Steve Gabel
AMC/Airfield Ops and Procedures
AMC/A3AP

MSgt Bryan Ellis
AMC Airfield Systems
AMC/A6OS

Mr. Tim Schartung
AMC Airfield Systems
AMC/A6OS

Mr. Stephen Rohring
FAA ATREP
FAA

MSgt Phillip Mullins
AMC Airfield Systems
AMC/A6OS

Maj Allen Barton
USAF AFREP
FAA

//SIGNED//

KELLY S. KOEPSSELL, Lt Col, USAF
Chief, Airfield Operations and Procedures Branch
HQ Air Mobility Command

Section I - Executive Summary

Purpose and Scope:

This evaluation was conducted to provide an assessment of the quality, adequacy, and safety of the air traffic system supporting flying operations at McGuire AFB. It included: an evaluation of air traffic system capability, air traffic and flight procedures, Air Traffic Control (ATC); Airfield Management (AM), Airfield Operations Management (AOM), Terminal Instrument Procedures (TERPS), Airspace, Air Traffic Control and Landing Systems (ATCALs), and Civil Engineering (CE) support. Comprehensive checklists were used to evaluate ATC, AM, AOM, TERPS, CE, and ATCALs maintenance for compliance with published guidance. This report identifies two levels of deficiencies: (1) Observations: air traffic system deficiencies that indicate adverse flight safety or flying mission impact, and (2) Problems: unsatisfactory checklist items in specific functional areas which reflect noncompliance with standards.

Executive Summary:

The Airfield Operations Flight Commander (AOF/CC) and the AOF leadership staff consistently provide superb guidance and direction in support of McGuire's highly complex air traffic system. The AOF officers are comprehensively engaged with all base agencies and maintain an active presence throughout the military and civil flying communities. Strong Pilot/AOF Liaison and Mid-Air Collision Avoidance programs provide for increasing awareness, enhanced flight safety and open communications of airfield and air traffic control related issues and concerns. While overall flight administrative processes are solid, increased emphasis is needed to ensure that all required items are included in the AOI and that quarterly AOBs are conducted within the required timeframe. Additionally, AOF officers need to continue to pursue required air traffic control and airfield management certifications.

The McGuire Airfield Management team provides great oversight and management of the airfield environment. The Airfield Manager is intimately involved in every aspect of operations on the airfield. Despite the lack of a SNCO as the Deputy Airfield Manager and inexperienced mid-level NCOs, most key programs are managed effectively. AM operations section provides superb support to 305 AMW, 514 AMW, tenant flying units and transient aircraft with well-established policies and procedures for managing daily airfield operations. The McGuire airfield pavements and infrastructure are old and badly deteriorated, however there is an aggressive plan that includes numerous prioritized, programmed and funded airfield projects designed to fix significant problems that have existed for more than 10 years, to include several ATSEP Observations. AM and CE are working aggressively as a team to schedule upcoming construction projects with minimal impact on aircraft operations. The airfield driving instruction needs to be updated and AM needs to focus attention on administration of the program, with particular emphasis on unit Airfield Driving Program Managers' management of their programs and strict enforcement of initial and refresher training. AM personnel are committed to ensuring McGuire has the safest airfield environment and highest level of customer service possible.

HQ AMC TERPS effectively manages McGuire's TERPS program in an aggressive manner. Challenges exist to coordinate the instrument procedures in a timely fashion for conversion to the new FAA TERPS criteria. All of McGuire's instrument approach procedures have been evaluated with the new Global Procedures Designer automated software, and are being postured for FAA flight inspection. New departure criteria will require extensive changes to flight profiles and possibly necessitate revisions to long-standing inter-facility coordination procedures. This will result in a complex challenge within McGuire's congested airspace environment.

McGuire Approach Control is manned with a very professional and highly talented group of staff and controllers completely focused on excellence. The chief controller is providing strong leadership despite being assigned in an interim status due to a heavy change in key leadership positions. Supervisors maintain excellent awareness and control of ATC operations, while employing impressive internal procedural and non-procedural coordination. Despite the facility's great work, some instances were noted where controllers were not consistently soliciting PIREPs when required, not issuing ATIS message broadcast updates and not using correct phraseology. Overall, the combination of motivated hard-working supervisors and dedicated controllers ensure the air traffic team continues to provide the wings and tenant units with stellar ATC services.

McGuire Control Tower is providing excellent service to all users. Watch supervisors and controllers were professional and worked extraordinarily well as a team in ensuring operational requirements were being met and effective tower training was being accomplished. Controller accomplishment of position relief briefings and use of checklists were exceptionally noteworthy. The facility is led by an outstanding duo of senior NCOs that have the experience and motivation to successfully lead the facility through the many challenges being faced due to BRAC, airfield construction, and tower cab improvements.

The Air Traffic Control Training and Standardization programs are led by an exceptional NCO who is training two highly motivated NATCT and NSE replacements. The training team has expertly incorporated the newly revised Career Field Education and Training Plan review and completed a full rewrite of every certification guide. The Simulation Administration NCOIC and the Automation NCOIC have incorporated realistic scenarios which adhere to block standards into both the Tower Simulation System and Radar programs respectively. While the core Training and Standardization team have made great strides to correct deficiencies and enhance the program, facility leadership attention is needed to ensure basic evaluation documentation is accomplished and any noted deficiencies are corrected in a timely manner to ensure the training program continues to improve.

The McGuire ATC Automation work center provides high quality support to the 305 Air Mobility Wing. The NATCA exercises solid oversight to a diverse and demanding work center. Administrative functions are well managed and meet all requirements. Software configuration management is noteworthy and complies with all associated Air Force and FAA requirements. Security management practices are sound and are strictly implemented ensuring data integrity and system availability. Automation work center staffing is well planned and executed providing full-time support to all system users.

Airspace Management issues continue to be proactively addressed by the McGuire team. Effective planning for a variety of emerging airspace actions is ongoing. Active engagement in the proposed expansion of Philadelphia Approach Control's Class B airspace, Warren Grove's Restricted Area (R-5002), and the planned increase in the number and type of aircraft at Joint Base McGuire/Dix/Lakehurst will ensure mission requirements are met. Coordination with Ft Dix Range Control concerning the scheduling of R-5001 should be investigated for possible benefits to flying operations. The combined efforts of the new airspace manager and air traffic control personnel can overcome the challenges of a congested terminal airspace environment and future Joint Basing actions.

The 87th Civil Engineering Squadron proactively supports the wings' flying missions as well as over 40 other missions with the integration of Fort Dix and Lakehurst. Significant progress has been made in several key areas since the last ATSEP. CE maintains excellent programs for temporary airfield construction waivers, and has relocated functions away from the airfield which allow for the demolition of several buildings from the airfield environs. The Power Production shop provides quick, reliable, and professional service for emergency generators and the Horizontal team provides strong support in the areas of emergency airfield pavement repairs, airfield sweeping, and snow removal. Most of snow removal equipment is in good condition with the exception of the snow blowers which are on average 18 years old and often break down when needed the most. Civil Engineering working with Airfield Management has developed an outstanding 10 year pavement improvement plan, and then programmed airfield projects for the runways and taxiways to bring all the airfield surfaces into compliance. Additionally, in Jan 09, HQ AFCESA completed the airfield pavement evaluation with an overall area-weighted average Pavement Condition Index (PCI) rating of 74, a great improvement from the 68 PCI they received during their last evaluation. But, Runway 06/24 and its adjoining taxiways showed a drop in their overall PCI rating. HQ AMC strongly supports the restoration and modernization projects for Runway 06/24. Improvement is needed in the E-Series maps, and the removal of trees and vegetation penetrating the runway approach/departure surfaces. Given the information provided by CE to TERPS on vegetation penetrating the Runway 24 approach end of runway has lead to raising the Height Above Touchdown (HAT) in 2008. Also, during the summer months departing aircraft such as KC-10 will not be able to take-off at maximum fuel load do to the requirement to safely clear the departure area vegetation. As joint base McGuire-Dix-Lakehurst continues to grow both in mission and complexity it becomes even more critical for CE to have a dedicated planner in order to effectively work airfield related issues.

The 87th Communications Squadron is providing satisfactory ATCALS support. Quality Assurance provides adequate support to the work centers but needs to take a more active role in the self inspection process with a focus on Standard Maintenance Practices. Radar maintenance provides expert support to the ATCALS mission and has ensured long term success with a comprehensive training plan and solid work center programs. Airfield Systems satisfactorily meets the ATCALS mission requirement. However there is a widespread need within the work center to commit to a higher degree of attention to detail to overcome the difficult airfield conditions and realize their obvious potential.

Section II – Special Interest Items (SIIs) and Observations
(These items affect or have the potential to affect the flying mission or flight safety)

a. SPECIAL INTEREST ITEMS:

AF SII 200901 Runway Incursion Prevention

Result: Unsatisfactory

See Observation number (09-KWRI-001)

AF SII 200902 VOR Building Infrastructure

Result: Satisfactory

AF SII 200903 Aircraft Wingtip Clearances

Result: Not Observed

b. OBSERVATIONS:

(00-WRI-010) REPEAT

The absence of taxiway lighting potentially degrades flight safety.

Discussion:

Taxiways H, K, and L presently do not have taxiway lighting to support nighttime operations and day IFR conditions as required IAW AFM 32-1076, Design Standards for Visual Air Navigation Facilities. Lighting is required on these taxiways to facilitate the safe movement of aircraft during night and poor weather operations. Taxiway edge lights define the lateral limits and direction of a taxiing route. Currently, Taxiways H, K, and L are using temporary reflectors as a substitute for permanent taxiway lighting. AFM 32-1076, para 9.3, requires the use of reflectors only to supplement existing runway and taxiway lighting or for temporary installations. Additionally, the reflectors cannot be used without specific approval from the MAJCOM. Notwithstanding the wing's repair action for CAT II taxiway centerline lighting requirements, HQ AMC/CEP non-concurred against programming efforts. Subsequently, the project was cancelled and funds diverted to the next highest wing priority. Design criteria for CAT II operations are delineated IAW AFM 32-1076, para 2.1 (Taxiway Aids). The main purpose for taxiway centerline lighting is to provide alignment and course guidance information to supplement edge lighting IAW AFM 32-1076, para 5.2.1. Although there was confusion with the CAT II and CAT III edge lighting requirements, centerline lights cannot be substituted for taxiway edge lights without the approval of MAJCOM/CE. Centerline lights may be installed where it is impractical to install edge lights; however, in this case the feasibility of using direct-burial cable should substantially reduce the amount of funds required for the project.

Recommendation:

Establish CAT II taxiway lighting requirements and temporary waivers for aircraft operations IAW AFM 32-1076, para 1.8. Coordinate waiver request with wing agencies for MAJCOM approval. Design and proceed with taxiway edge lighting project until completion.

UPDATE:

2004 UPDATE

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Temporary waivers have been forwarded to HQ AMC for processing. Taxiway 'H' is under construction and will not open for operations until after taxiway lights are installed and functional (ECD: Dec 04). Taxiways K and P repair contract was awarded January 2004 with an ECD of May 2004. Taxiway K has reflectors installed, and temporary waiver was forwarded to HQ AMC for processing. These reflectors are noted in the IFR FLIP and wing OI. Taxiway P will remain closed until after 'A Bay' hangar renovation is complete with an ECD of Sep 04.

2005 UPDATE

A temporary construction waiver is on file for all projects. Taxiway H is under construction with an ECD of June 06. Taxiway K and P progress was delayed due to lack of funding in 2004. However, the project is now funded with an ECD of Spring 06. Taxiway L work has been completed. Of note, taxiway centerline lights are optional for CAT II runways IAW AFMAN 32-1076, Table, 2-1.

2007 UPDATE:

CAT II taxiway centerline lights are now optional IAW UFC 3-535-01. Nearly all items have been completed or are no longer required due to new guidance in UFC 3-535-01. The last item required for correction is the installation of taxiway lights on Hotel taxiway (ECD Jun 08).

2009 UPDATE: Taxiways Kilo and Papa are completed and operational. Taxiway Hotel north end is complete and operational. Taxiway Hotel south end is under construction (ECD Aug 09). Project Number is PTFL08120103. The Taxiway Hotel project is an US Army project.

(02-WRI-001)

REPEAT

Improperly installed and now decommissioned arresting gear components near the shoulders of Runways 06/24 pose a serious threat to aircraft.

Discussion:

When aircraft arresting systems are decommissioned and removed from the airfield environment with no intent of replacement in the existing location, all related structures and foundations must be demolished and removed from the airfield. Grades in the area must be restored to comply with criteria provided in UFC 3-260-01 as appropriate (UFC 3-260-01, A14.2.20.1.1.5).

McGuire AFB has programmed this airfield hazard for removal under Project PTFL021024 in FY05 (\$150K)

Recommendation:

Since this hazard is located in the USAF Mandatory Zone of Frangibility, recommend immediate removal from the airfield to mitigate this violation of airfield planning and design criteria. The wing must process a temporary waiver until resolved.

UPDATE:

2004 UPDATE:

Project PTFL02-1024 was split into 2 separate projects for funding/execution reasons. Demolition of the first is funded and awaiting execution. Section two is priority #3 on the HQ AMC/A7 demolition project listing and is awaiting funding.

2007 UPDATE:

Project is awaiting funding. ECD: TBD

2009 UPDATE:

Arresting gear has been completely removed on Rwy 18/36. Arresting gear along Rwy 06/24 are programmed for removal under the Rwy 06/24 project (ECD Dec 10). Project Number is PTFL 02-1024.

09-KWRI-001)

Created from AF SII 200901

The runway incursion prevention and airfield driving program has the potential to impact aircraft operations.

Discussion:

Despite a relatively low number of runway incursions (4 in the past 4 years) two runway incursions occurred during the week of the ATSEP. Three of the four runway incursions have occurred in 2009. Several problems exist that have the potential to increase the number of future runway incursions. Airfield Management is not notifying or involving squadron commanders in correcting airfield driving program discrepancies and airfield driver violations. Airfield Driving Program Managers (ADPMs) are not effectively ensuring all airfield drivers receive their annual refresher training. The 108th ANG unit had 210 out of 724 airfield drivers who did not complete airfield driver refresher training. This same problem was identified during the 2007 ATSEP as an off-checklist problem. The Civil Engineering and Security Forces squadrons also had individuals without required refresher training. Deployments, high turnover and ANG infrequent weekend training are the leading causes for personnel not completing the required annual refresher training. During the ATSEP tower controllers were not using proper phraseology when communicating with vehicles, and there were problems with coordination between local and ground control. The Security Forces ADPM was deployed and the 2nd alternate was not qualified to perform the duties as ADPM. Airfield Ops conducted several briefings of the HAF A3/5-mandated runway incursion prevention training during a Safety Day. However, no other briefings have been conducted since that time. Only approximately 10% of the base's airfield drivers received the briefing. To meet the required 15 June 2009 suspense a more aggressive briefing schedule is required.

Recommendation:

Complete the following actions:

- a. Ensure all units have an ADPM and alternate who are qualified to perform duties.
- b. Notify Squadron/CC and involve them in correcting airfield violations and ADPM discrepancies.
- c. Involve Wing leadership in strictly enforcing the requirement for runway incursion prevention training and Airfield Driver refresher training.
- d. Increase violation consequence for drivers who have no airfield driver license and who do not complete the annual refresher training.
- e. Require ADPMs to immediately suspend airfield drivers in their unit who do not receive airfield driver annual refresher training at the end of the month the refresher training is due. (Personnel returning from a deployment will have an extra 30 days to complete refresher actions)

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Advise the driver to return their airfield drivers license (AF Form 483) to the ADPM until the refresher training is completed.

e. Immediately start conducting several weekly briefings of the AFFSA developed Runway Incursion Prevention Training to meet the 15 June 2009 suspense.

(09-KWRI-002)

Incorrect or inaccurate depiction of obstructions to air navigation on E-tab charts, especially near Rwy 24 approach end, negatively affect mission accomplishment. Lack of exact information on obstructions has lead to the raising of the height above touchdown for the Instrument Landing System approach, Rwy 24, from 200 feet to 262 feet, reducing the likelihood of success for aircrew conducting successful instrument approaches in instrument meteorological conditions. Further, this situation requires certain aircraft to depart Rwy 06 with less-than-optimal fuel loads in order to guarantee clearance from obstacles, whose actual height is not known or not correctly depicted on the E-tab charts.

Discussion:

Data required for building instrument approaches come from the E-tabs prepared by Civil Engineering. The personnel who work in the office that prepares the E-tabs are overworked and tasked with too many duties. Immediate relief needs to be provided to this office to ensure that accurate data is collected on obstacles and that the accurate data is correctly depicted on the E-tabs. Collection and correct depiction of this accurate obstruction data on the E-tabs is critical to flight safety.

Recommendation:

- a. Resurvey obstacles in question.
- b. Remove all but the required information from the E-tabs.
- c. Submit E-tabs for approval and provide approved E-tabs to MAJCOM for review and use in building instrument approaches and departure procedures.
- d. Build procedures using correctly and correctly depicted data and process procedures for approval.

Section III Problems/Off-Checklist Problems

Checklist problems in AFI 13-218 determined as not being in compliance with USAF or FAA directives and Off-checklist problems (noncompliance identified through means other than AFI 13-218 checklists)

a. PROBLEMS:

1. Operations - 548 item(s) evaluated, 40 problem(s) annotated:

(09-KWRI-ATC-001)

Checklist Item Number: ATC094

Controllers do not consistently/promptly collect and disseminate PIREP information IAW FAAO JO 7110.65 Para 2-6-2.

(09-KWRI-ATC-002)

Checklist Item Number: ATC095

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ATIS code/message changes are not consistently broadcasted on all appropriate frequencies.

(09-KWRI-ATC-003) Checklist Item Number: ATC101
Correct phraseology is not consistently used IAW FAAO JO 7110.65, Ch 2-7, 9 & 10.

(09-KWRI-ATC-004) Checklist Item Number: ATC037
On one occasion, controllers failed to ensure that "HOLD SHORT" instructions were properly issued IAW FAA JO 7110.65.

(09-KWRI-ATC-005) Checklist Item Number: ATC047
On one occasion, ground control inaccurately coordinated that the runway was clear of vehicles to the local controller, due to a mix-up of vehicle call signs.

(09-KWRI-AFLD-006) Checklist Item Number: AFLD002 **Repeat**
Originally identified during ATSEP 2003. Numerous areas on the airfield require repainting. Several meetings between OSS/CES/Contracting have occurred to mitigate the problems but funding is still TBD. An airfield painting/restriping priority list between the OSS and CE was agreed to in April 2003.

(1) WO #42123 was submitted to address the following problems:

- a. Repaint all airfield access road "Stop" bars to 2 ft wide and paint the word STOP in conjunction with each bar.
- b. Paint additional stop bars where needed on access roads that lead to active runways and taxiways.
- c. Paint Xs on Twy Tango at each end of the taxiway. Paint "STOP" and stop bars at end.
- d. Stop bar and STOP on infield access road leading to Rwy 18/36 must be blacked out and repainted no closer than 100 feet to edge of runway.
- e. Correct vehicle roadways (flightline driving lanes) IAW A/C 150/5340-1H.

(2) WO #42123 will also resolve the following concerns:

- a. All taxiway centerline markings must have 3-foot break before and after all interruptions.
- b. Twy Delta is required to be painted 75 ft in width.
- c. Remove nonstandard markings on Twy Delta.
- d. Correct and restripe deceptive markings IAW ETL 94-01.
- e. Deceptive surface markings are lacking on Twy Golf in front of 3-bay.
- f. Remove nonstandard markings on Twy Lima.
- g. Hold line on Twy Lima broken at new edge lights.

(3) WO #42123 will correct:

- a. Survey and remove incorrect RWY markings from RWY 06/24.
- b. Restripe runway IAW ETL94-01.

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- c. Remove paint from areas where there is excessive paint buildup and restripe.
- (4) WO #41986 will restripe aircraft parking aprons and taxiways.

The following discrepancies require a project or work order to correct:

- (1) Overrun chevrons not within 5 ft of edge (approach end RWY 24).
- (2) Threshold markings do not start at beginning of threshold, incorrect width and spacing.
- (3) First centerline stripe (approach ends RWY 06/24) 61 ft long and has incorrect spacing.
- (4) Distance between 1st and 2d centerline stripe (approach end RWY 24) is incorrect.
- (5) First set of Touch Down Zone lines (approach end RWY 24) need black borders.
- (6) Fixed Distance Markers (approach end RWY 24) are less than 30 ft wide

2005 UPDATE:

Airfield manager submits a yearly airfield marking and paint removal plan to CES to better manage the airfield marking program. All airfield paint projects are complete except for:

- (1) Ensure vehicle roadways (flightline driving lanes) are painted IAW Dept of Transportation's Manual on Uniform Traffic (Control Devices and ETL 04-2 instead of A/C 150/5340-1H.
- (2) Taxiway Golf deceptive surface markings exceed the ETL 04-2, paragraph 9.3.2 and figure 18 dimensions. Request a waiver IAW AFI 32-1042.

2007 UPDATE:

The size and scope of operations, weather conditions, etc., make it difficult to stay ahead of all airfield marking projects. The Airfield Manager has identified and prioritized a myriad of paint projects required to be accomplished on the airfield. Two extensive paint projects were accomplished in June 07 and October 07. Another \$125K project to accommodate Red Ball Express missions has been recently approved for the main ramp. The airfield manager should continue to provide a comprehensive annual paint plan to CES for project programming and execution. Due to the size of the airfield and the multitude of areas that need painting, the following areas below were identified as areas needing attention.

- (1) Main ramp lead-in lines/nose wheel blocks.
- (2) Eradicate green wingtip clearance lines and repaint according to ETL 04-2.
- (3) Repaint runway 18/36 centerline, designation markings, edge stripes and LZ markings.
- (4) Remove/repaint existing lead-in line from Taxiway H to runway 36.
- (5) Repaint yellow lead-in line to Taxiway Lima, NW Lima, Juliet, Kilo, Hotel.
- (6) Repaint existing yellow lead-in line from Lima to Juliet, and Juliet to Kilo.
- (7) Remove yellow paint along the runway edge between NW Lima and Hotel.
- (8) Repaint stop bars and stop at access roads to the runway.
- (9) Repaint edge markings on Taxiway Golf between Bravo and Charlie.

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- (10) Repaint edge markings on x-ray and victor rows.
- (11) Romeo row needs a second edge marking by spot 1.
- (12) Add double yellow lines along backside of bravo row.
- (13) Remove erroneous red line/paint edge/deceptive surface markings (at the soon to be named Taxiway Quebec).
- (14) Repaint VFR hold line/taxiway Centerline at Taxiway Kilo.
- (15) Extend eradication of centerline paint at Romeo rows spots 5-11 to ensure no confusion to taxiing aircraft.

2009 UPDATE:

Inclement weather has prevented the repainting of numerous airfield markings this year but will continue after the weather is more accommodating. In addition to the 2007 update, the following items were not identified and need to be painted:

- (1) 2007 WO #42123 was submitted to address the following problem:
 - (a) All STOP bars requested by the AFM have been painted, plus we identified about 10 more. Two are missing the words "STOP" was expected to have contractor come in this weekend to correct but weather may not permit it.
 - (b) Completed
 - (c) Completed 2008, STOP bar has been repainted.
 - (d) All STOP bars completed.
 - (e) Per the AFM all center lanes were painted yellow, on the airfield they are 6" x 15 with 25' gaps; on Tower Road, the stripes are 4" x 10' with 30' gaps.
 - (2) 2007 WO#42123 will also resolve the following concerns:
 - (a) No guidance in CE regulations, determination made by Mr. Dean that the lines should cross.
 - (b) Taxiway Delta edge line are still over 200' (99 feet to one side and 120 on the other side of the centerline, all connecting taxiways are at the required 75'.
 - (c) Completed
 - (d) Completed
 - (e) Completed
 - (f) Completed
 - (g) Completed
 - (3) 2007 WO#42123 will correct:
 - (a) Completed.
 - (b) Completed, repainted centerline in April after this year's rubber removal.
 - (c) Completed.
 - (4) 2007 WO#41986 restripe aircraft parking aprons and taxiways:
 - (1) Not corrected; still not within 5', some 7' to 10' from edge of concrete.
 - (2) Corrected and completed.
 - (3) Not corrected; still not within specifications, runway was repainted last year in the same configuration.
 - (4) Corrected and completed.
 - (5) Corrected and completed.
 - (6) Corrected and completed.
- (2005 Update, page 11)
- (1) Completed, All lines were painted in yellow as per request by the AFM.

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- (2) Completed
(2007 Update, page 11/12)

(1) Completed, main ramp was completely repainted, but, the nose wheel blocks require adjustments for best placement of A/C over fuel pits and Wing Tip Clearance (WTC) lines.

- (2) Completed

(3) Completed, centerline and LZ markings were painted in April 09 after rubber removal, the edge stripes and designation markings were painted last year and are still in excellent condition.

(4) Completed, old lines were blacked out and new one painted, was not requested by AFM as part of this year's paint program/schedule.

(5) Completed, all look in fair shape, but should be considered for next year's paint project.

(6) Completed, all look in fair shape, but should be considered for next year's paint project.

(7) Completed removal 100' section of yellow but still requires extra to remove the additional blacked-out curved lines approximately another 200'.

(8) Completed Apr 09.

(9) Completed over 2600 feet along each side.

(10) Completed Apr 09.

(11) Completed Apr 09.

(12) Completed Apr 09.

(13) Completed Apr 09.

(14) Completed Apr 08.

(15) Completed Apr 09 on all spots except the one in front of bldg 3211. AFM requested that one be left, used to tow A/C inside bldg 3211.

(09-KWRI-AFLD-007)

Checklist Item Number: AFLD006

The mandatory runway hold sign on Taxiway Lima is not collocated with the runway hold line. Repaint the runway hold line adjacent to the existing runway hold sign.

(09-KWRI-AFLD-008)

Checklist Item Number: AFLD007

Several taxiway centerline markings are not reflective.

(09-KWRI-AFLD-009)

Checklist Item Number: AFLD013

A closed taxiway/road leading to Runway 18/36 does not have the yellow centerline removed.

(09-KWRI-AFLD-010)

Checklist Item Number: AFLD015

The INS marking on taxiway Lima and Juliet is either missing or incorrectly placed.

a. The sign on Taxiway Lima is located behind the aircraft and not visible to the pilot in the cockpit.

b. An INS Checkpoint sign is located on Taxiway Juliet, but does not have an INS checkpoint painted on Taxiway Juliet. If the sign information is correct, paint the INS marking; if incorrect, remove the sign.

(09-KWRI-AFLD-011)

Checklist Item Number: AFLD020

Repeat

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Repeat from 2007 ATSEP. C-17 wingtip clearance lines on X-Ray row, Alert mission markings on Victor row, Runway 18/36 spot landing zone markings and combat off load markings on X-ray and Romeo row do not have a AMC/A3 waiver IAW AFI 32-1042.

2009 UPDATE: The unit has not submitted a waiver to the MAJCOM.

(09-KWRI-AFLD-012)

Checklist Item Number: AFLD024

An ALSF-1 is not installed on the CAT 1 Runway 24. The modified SALSF installed on Runway 24 does not have an approved waiver.

(09-KWRI-AFLD-013)

Checklist Item Number: AFLD034

Taxiway edge lights on Taxiway Lima, November, and Whiskey are not flush with grade. These taxiway edge lights were under water due to the lack of drainage caused by the recent pavement overlay around the edge lights. Lights were not clearly visible from the centerline of the taxiway.

(09-KWRI-AFLD-014)

Checklist Item Number: AFLD042

Repeat

Repeat from 2003 ATSEP. All airfield signs are not installed IAW AFMAN 32-1076. Signs at intersection of Twy November/Lima and Mike/Lima both incorrectly indicate Twy Lima instead of 'Ramp.' Signs were incorrectly installed during a signage project. The Airfield Manager is working with CES to correct the mistake, a NOTAM has been issued, and a flight publication change has been submitted and will be briefed at the next quarterly Fly Safe briefing.

2007 UPDATE:

Project is awaiting funding.

2009 UPDATE:

An airfield signage project has been funded/awarded with an estimated completion date of Nov 09. Project number PTFL 08-1033. Numerous additional sign discrepancies not previously identified for correction and not included in project PTFL081033 were discovered during this ATSEP. The Airfield Manager, CE and Safety must conduct a comprehensive inspection/survey of all airfield signs to ensure all incorrect signs are identified, reported, and removed or mitigated and a complete project is programmed and funded correcting all sign problems. The below discrepancies are not all inclusive and additional airfield sign discrepancies may exist. Only a thorough sign inspection will determine what other signs may need to be corrected. Several of these signs discrepancies were blacked out during the ATSEP, for the remaining immediately submit a work order and correct the problem.

- a. Golf Taxiway directional signs located on closed Taxiway Bravo need to be removed.
- b. Two Runway 18 direction sign arrows are pointing in opposite direction of Runway 18 near Taxiway Hotel and ANG Ramp intersection on south side and Taxiway Lima on the northeast side.
- c. Taxiway Foxtrot direction sign located on the north side of Taxiway Golf and after the Taxiway Foxtrot intersection is in the wrong location.
- d. An INS Checkpoint sign located on Taxiway Lima is not located to the rear of the aircraft and is not visible to a pilot when their aircraft is located on the INS checkpoint.

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e. A taxiway/apron direction sign and runway destination sign between Taxiway Lima northwest side and Taxiway Hotel/Runway 36 needs to be removed. The taxiway has been removed for several years.

(09-KWRI-AFLD-015)

Checklist Item Number: AFLD052

Several signs on the airfield have arrows pointing in the wrong direction. Several taxiway direction signs show a 45-degree turn instead of the 90-degree turn of the taxiway.

(09-KWRI-AFLD-016)

Checklist Item Number: AFLD058

Numerous taxiways and aprons have vegetation along the edge blocking the drainage of water and creating ponding on or near the taxiway and aprons.

(09-KWRI-AFLD-017)

Checklist Item Number: AFLD068

An abandoned concrete foundation and junction box/poles associated with a removed transmissometer between Runway 24 and Taxiway Golf (northeast) has not been identified for removal or waiver.

(09-KWRI-AFLD-018)

Checklist Item Number: AFLD069

The star barriers and concrete barriers located near the taxiway leading into the primary Hazardous Cargo Parking Area are located 60 feet from the taxiway centerline. The minimum distance the barriers can be placed near the taxiline for C-17 aircraft is 110 feet. No waiver exists.

(09-KWRI-AFLD-019)

Checklist Item Number: AFLD072

The E-tab maps are not accurate and need to be redone.

(09-KWRI-AFLD-020)

Checklist Item Number: AFLD078

The summary of temporary waived items was not presented to the facilities board during the last 12 months as required.

(09-KWRI-AFLD-021)

Checklist Item Number: AFLD085

Remnants of the old arresting system on Runway 24/06 still exist. See Observation 02-WRI-001

(09-KWRI-AOM-022)

Checklist Item Number: AOM012

References to aircraft taxiing requirements do not include heavy aircraft jet thrust avoidance procedures (in the AOI). Additionally, Taxiway Sierra is unusable, but not noted as such in the AOI.

(09-KWRI-ATCALS-023)

Checklist Item Number: ATCALS048

Several jobs have been called out on the Remote Status Indicators at the RAPCON for the ILS Systems. The RSI passed all the operational checks. The inspection team was unable to determine if the problem was the RSI itself, the actual equipment faulting out, or if there was a training deficiency on the RSI in the operations community. Recommend that RAPCON controllers log out a job every single time the RSI goes into alarm, so that maintenance personnel can start troubleshooting the problem instead of fixing a symptom.

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(09-KWRI-ATCALS-024)

Checklist Item Number: ATCALS052

The Runway 24 Glide Slope antenna tower is not properly grounded at the three legs. One down conductor was attached to a three-foot ground rod that was pulled up with two fingers and was not protected at the base of the tower with conduit. The other leg has a loop in the cable that does not meet standards.

(09-KWRI-ATCALS-025)

Checklist Item Number: ATCALS055

The maintenance vehicle had one front tire that was bald with a screw in the tire and the other tire had little tread left. Operators should perform inspections of the vehicle according to local base instructions and Air Force Instructions, and should immediately identify unsafe conditions. All discrepancies should be listed on the AF Form 1800.

(09-KWRI-ATCALS-026)

Checklist Item Number: ATCALS056

Corrosion and dirt were found on several pieces of equipment to include ILS equipment rack; rusty bolts on the VOR monitor antenna assembly; corrosion on the inner marker inside and out; missing hardware allowing dirt and moisture into the ILS ducting; and ground systems that require no-ox treatment. The Quality Assurance function should review the OI and develop an effective corrosion control program to help Airfield Systems. Airfield system should place emphasis on corrosion and decrease the PMI interval should conditions warrant.

(09-KWRI-ATCALS-027)

Checklist Item Number: ATCALS061

The TACAN Monitor B voltages are out of tolerance. This may be the possible cause of the unusual occurrence of reset outages that occurred during April 2009. Airfield Systems should place emphasis on indentifying the alarm condition that is causing the high occurrence of failures.

(09-KWRI-ATCALS-028)

Checklist Item Number: ATCALS068

The runway 24 Glide Slope annual facility certification had out of tolerance numbers recorded on the form. The system did pass during the ATSEP after minor adjustment. Care should be taken to perform the annual certification by comparing the measurements with the reference document and either correcting the out of tolerance reading or properly recording the correct number on the form. Verification by another qualified individual will eliminate procedural errors.

(09-KWRI-ATCALS-029)

Checklist Item Number: ATCALS081

The runway 24 GRN-30 localizer RF Detector Unit Detected width output in both normal and quadrature did not match the facility reference and the quadrature readings were outside of the TO specified tolerance. Recommend maintenance personnel insure the system is meeting references during scheduled preventative maintenance inspections.

(09-KWRI-ATCALS-030)

Checklist Item Number: ATCALS085

The Rwy 24 Localizer batteries did not hold the system for a minimum of 30 minutes.

(09-KWRI-ATCALS-031)

Checklist Item Number: ATCALS158

The UPS was bypassed in the ATC tower because of a battery failure and a work order was open with parts procured. There was no indication this item was unserviceable in the ATC tower.

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The UPS still had power applied even though it was not in operation. The technician attempted to perform the Preventative Maintenance Inspection causing DVRS system failure. Proper Maintenance Data Documentation by placing an AFTO Form 350 on the equipment would have warned the technician of the failed part and prevented system failure. (Reference T.O. 00-20-1)

(09-KWRI-AM-032) Checklist Item Number: AM008 **Repeat**

The AFM has not identified and reported to CE all airfield sign discrepancies. See 09-KWRI-AFLD-014.

(09-KWRI-AM-033) Checklist Item Number: AM010 **Repeat**

The AFM has not identified all airfield marking discrepancies. See Airfield Checklist numbers AFLD002 & AFLD006.

(09-KWRI-AM-034) Checklist Item Number: AM011

The AFM has not identified all airfield lighting discrepancies. See Airfield Checklist number 09-KWRI-AM-016.

(09-KWRI-AM-035) Checklist Item Number: AM015

The AFM has not identified and reported several obstacles located on the airfield near Rwy 06/24. See Airfield Checklist Problem 068.

(09-KWRI-AM-036) Checklist Item Number: AM019

The AFM has not identified, documented and reported the missing construction barricades on the closed Taxiway Hotel near the intersection with Runway 36 and near the ANG ramp.

(09-KWRI-TE-037) Checklist Item Number: TE035

The VOR/DME or TACAN RWY 18 published procedure does not have a VDP. The new procedure developed in GPD does contain a VDP and will be published after the FAA flight inspection. The flight inspection is expected to be completed by 30 June 09.

(09-KWRI-TE-038) Checklist Item Number: TE044

The ILS RWY 24 wheel crossing height does not meet TERPS standards and a waiver is not on file. The wheel crossing height value is published on the approach procedure. Once the procedure is flight inspected a waiver will be submitted to AFFSA for approval.

(09-KWRI-TE-039) Checklist Item Number: TE063

The diverse departure assessment on file does not contain the MAJCOM signature. New diverse departure procedures will be completed this summer.

(09-KWRI-TE-040) Checklist Item Number: TE076

Although the instrument procedures are inspected periodically the original FAA flight inspection signatures are not contained on all instrument approach procedures. Once the flight inspections are complete for the new approach procedure package this item can be closed out.

2. Training - 185 item(s) evaluated, 12 problem(s) annotated:

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(09-KWRI-ATC-041) Checklist Item Number: ATC190

The NATCT/ANATCTs perform monthly record inspections IAW McGuire ATC Training OI 36-2, para 10.7, however steps are not taken to ensure discrepancies are corrected. Numerous discrepancies were clearly identified as repeat items in the NATCT results, but went uncorrected month after month. Facility leadership must ensure training and stan/eval findings are addressed and corrected to ensure oversight effectiveness/program integrity.

(09-KWRI-ATC-042) Checklist Item Number: ATC199

CCTLRs identify controllers in EDIT status, however specific corrective guidance/actions are not outlined. CCTLRs must ensure each problematic task is specified with a clear corrective means/way ahead outlined to ensure a clear training plan is conveyed to the trainee and training team.

(09-KWRI-ATC-043) Checklist Item Number: ATC224

Training evaluations contain the minimum required structure IAW AFI 13-203 and AFI 36-2201 v3, however training evaluation content is lacking. Evaluations for normal and daily/weekly EDIT periods, alike, often identified only the trained items and a brief 2-3 line synopsis with no planned corrective actions or results annotated. Evaluations since Mar 09 showed improvement, but consistency is needed. The training team, as a whole, must ensure items are addressed in the mandatory areas to ensure a clear training picture is captured in each evaluation.

(09-KWRI-AM-044) Checklist Item Number: AM067

AM personnel are not completing the Airfield Driving, Airfield Inspection and Maintenance, Airfield Criteria, and the Wildlife Hazard Management CBT before being certified to perform airfield inspections and checks as directed by AFI 13-213, A2.1.5, A2.2.1.

(09-KWRI-AM-045) Checklist Item Number: AM068

Personnel performing airfield inspections are not proficient in identification and reporting of airfield sign discrepancies and identifying obstructions in the infield areas. (AFI 13-213, A2.1.5.)

(09-KWRI-AM-046) Checklist Item Number: AM072

Although the NAMT is conducting monthly inspection of training records more attention to detail is needed to ensure discrepancies are identified, documented, corrected and briefed at the Training Review Board IAW AFI 13-213, 2.4.3.9, A7.

(09-KWRI-AM-047) Checklist Item Number: AM074

NAMT did not ensure that AM personnel started/completed position qualification training according to their skill level and position eligibility. (AFI 13-213, 2.4.3.14.2)

(09-KWRI-AM-048) Checklist Item Number: AM082

Recurring training is not being conducted on emergency evacuation/alternate facility procedures, nor documented on AF IMT 1098. (AFI 13-213, 7.2.8)

(09-KWRI-AM-049) Checklist Item Number: AM093

The ADPM for Security Forces was not trained to perform ADPM duties due to recent deployment of the primary ADPM. (See observation 09-KWRI-001)

(09-KWRI-ATCALS-050)

Checklist Item Number: ATCALS187

The Airfield System work center 5-level upgrade requirements do not meet the minimum requirements IAW Career Field Education and Training Plan (CFETP). Recommend that work center supervisor develop a comprehensive training plan that include all required elements of the CFETP.

(09-KWRI-ATCALS-051)

Checklist Item Number: ATCALS188

The Airfield Systems work center does not have all applicable AFJQS tasks loaded to the Master Training List. Recommend that all applicable AFJQS tasks be loaded into master training plan and recommend that work center supervisor review master task listing quarterly.

(09-KWRI-ATCALS-052)

Checklist Item Number: ATCALS194

The Airfield Systems work center Individual Training Plans (ITP) show accurate and current qualifications, but do not accurately reflect the individual training requirements because not all training requirements have been loaded to the members ITP's. Recommend that all training requirements be added to ITP's to obtain 5 or 7 skill level upgrade training and continuation training.

3. Quality Assurance - 46 item(s) evaluated, 2 problem(s) annotated:

(09-KWRI-ATC-053)

Checklist Item Number: ATC302

The NSE has a schedule to observe each crew and evaluations on file IAW AFI-13-203, para 14.7, 14.7.4, however one evaluation period, within the past year, went 112 days, vice the required 90 days. Oversight must be maintained, and status addressed/followed up in monthly TRBs to ensure program compliance.

(09-KWRI-AOM-054)

Checklist Item Number: AOM032

Two of the previous four AOBs were not conducted within required timeframe (quarterly).

4. Administration - 61 item(s) evaluated, 2 problem(s) annotated:

(09-KWRI-ATC-055)

Checklist Item Number: ATC330

Supervisors are annotating unusual occurrences IAW local directives and IAW AFI 13-203, para 3.1.3., however CCTLRs must ensure action is taken/annotated either on the 3616 or MFR to address what actions were taken to address each item. Many areas appeared to be continual occurrences with no follow up/corrective actions documented.

(09-KWRI-AM-056)

Checklist Item Number: AM119

Several entries in the IFR Supplement were incorrect and need to be corrected/deleted.

b. OFF-CHECKLIST PROBLEMS: 14 off-checklist problem(s) annotated

(09-KWRI-OCP-001)

Functional Area: AFLD

Repeat from 2007 ATSEP (07-WRI-OCP-001). Nonstandard C-17 combat offload markings located on Romeo, X-Ray, and Alpha rows, vehicle boxes located on Victor row, and C-17

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wingtip distance markings located on X-Ray row require waiver approval by AMC/A3. MAJCOM AM functional manager inputs was requested prior to painting wingtip distance lines; while it was determined McGuire could be a test-bed to determine the effectiveness of the markings as a training tool for aircrew members, a waiver was still required. (AFI 32-1042, para 2.1)

2009 UPDATE:

Many of these were corrected during the 2009 painting airfield paint project, C-17 WTC on Romeo Row and Victor/X-Ray. Off-load markings were left in place by the AFM as training markings. A request for a waivers is being develop for submittal to HQ AMC/A7 for the off-load marking left in-place.

ETL 04-2

(09-KWRI-OCP-002) Functional Area: AFLD

Repeat from 2003 ATSEP (07-WRI-OCP-007).

Rwy 18/36 lacks runway overruns and shoulders. Until discrepancy is resolved, waivers must be processed.

2005 UPDATE:

- Title: RWY 18/36 Improvements - Project Number: PTFLs 941149, 941152, 941148
- Wing Priority Number: Unfunded - Cost: \$1.618M - Source of Funding: O&M
- Waiver is being processed and info is included in flight publications (UFC-3-260-1, Chapter 3)

2007 UPDATE:

All projects (PTFL 941149 Rwy 18 Overrun, P41152 Rwy 36 overrun, and 941148 Rwy shoulders) remain on the wing unfunded list

2009 UPDATE

PTFL 841149, 941152, Rwy 18/36 overruns options continue to be researched.

PTFL08-6000, Rwy 18/36 shoulders installation project is at the 10% design submittal stage expected complete NLT May 2009. UFC 3-260-01

(09-KWRI-OCP-003) Functional Area: AFLD

Repeat from 2003 ATSEP (07-WRI-AM-002).

(1) Runway 06 approach lights do not have a MAJCOM-approved waiver allowing configuration as a Simplified Short Approach with Runway Alignment Indicator Lights System (SSALR) IAW AFMAN 32-1076, para 3.4.1.

(2) Rwy 06/24 has no runway guard lights as required for CAT II runway operations.

(3) Rwy 24 is a Short Approach Lighting System (SALS) with sequence flashers. Station 10 crossbar is not operational. A NOTAM advising aircrews of this problem was submitted during the ATSEP and unit should update the IFR supplement at first opportunity. Project PTFL02-1007 is waiting funding to correct this problem.

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(4) Work Order (W/O) #42123 submitted 23 Feb will resolve several small airfield lighting discrepancies.

a. Remove and replace retaining bolts from light fixtures that have been sheared off. Areas include runway threshold and runway centerline.

b. Rwy 18/36 edge lights exceed 200 ft spacing near NW Lima (west side).

c. No exit lights on Rwy 18/36 at Kilo/NW Hotel/Lima or on Rwy 06/24 at Delta.

d. Exit lights on Rwy 18/36 at Hotel (south side) are not working.

e. Exit light on Rwy 06/24 & Charlie is broken.

f. Signs are missing panels at intersection of Golf taxiway and Alpha row.

(5) Project number TFL04-1027 will install edge lights on Twy K & P. Project was awarded 22 Jan 04.

(6) Project number PTFL 93-1021 (currently in progress) will replace the existing Aircraft Parking Apron Lights on the KC-10 Aircraft Parking area/Alpha, Bravo and Victor rows. ECD: May 2004

Furthermore, airfield lighting systems must be inspected to ensure they are frangible mounted, not obscured, and are foundations that extend above the finished surface of the surrounding area 3 inches or less IAW AFI 13-213, 2.1.2.29.4, A3.1.1.2, A3.1.2.5. The following corrective actions were initiated:

(1) Lighting systems are observed daily and during monthly joint airfield inspections to ensure compliance. However, the information in lighting sections on the old checklist was not consistent or accurate in all areas. Form was revised to ensure lighting systems are properly inspected on a daily basis.

(2) W/O #42123 submitted 23 Feb 04 will be possibly executed by SABRE and will grade (level taxiway drop-off) on all taxiway edges and taxiway edge light concrete support bases (Taxiways A, B, C, D, E, F, G, L, M, N, and Main Ramp taxiway).

2005 UPDATE:

Project PTFL04-1027 - Install edge lights on Twy K&P was awarded to R&W Contractors, and a planning meeting was held 19 Oct 05. The meeting determined the project will start in March 06 when weather is improved. The contractor estimates 30 days to complete each taxiway.

WO 42182 was submitted 20 Aug 04. It is recommended obstruction lights be installed on top of building 18179 (hangar directly across from 3-bay) and 1907 (21 EMTF). Additionally, the two fuel storage tanks along Twy Lima, bldg 1841 and 1842, should be surveyed to see if they violate the 7:1 runway lateral clearance criteria, therefore requiring obstruction lighting.

Project PTL04-1004, - Add Approach Lighting Rwy 06/24 is funded. ECD: TBD.

WO 42123 - Correct spacing of Rwy 18/36 edge lights near NW Twy Lima.

Deficiencies corrected: Exit lights on Rwy 18/36 at Kilo/NW Hotel/Lima and on Rwy 06/24 at Twy Delta, exit lights on Rwy 18/36 are functioning, exit lights on Rwy 18/36 at Hotel (south side) are working, exit lights on Rwy 06/24 at Charlie are working. Additionally, airfield lighting systems are inspected daily to ensure they are frangible mounted, not obscured, and foundations don't extend above the finished surface of the surrounding area 3 inches or more.

Lighting systems are inspected daily and during monthly joint airfield inspections to ensure compliance. New and more precise airfield inspection/lighting checklists were developed to ensure proper inspection of the aerodrome.

Deficiencies awaiting completion: Rwy 06 approach lights do not have a MAJCOM-approved waiver allowing configuration as a Simplified Short Approach with Runway Alignment Indicator Lights System (SSALR) IAW AFMAN 32-1076, para 3.4.1.

2007 UPDATE:

All projects are completed except for the following:

- (1) MAJCOM waiver for the SSALR is not required due to a change to UFC 3-535-01.
- (2) Project PTL04-1004 "Add Approach Lighting Rwy 24" is not funded.
- (3) Projects PTL06-1058 (CAT II Rwy guard lights) and 06-1004 (correct SALS light system) are awaiting funding.

2009 UPDATE:

(1) During previous ATSEPs the Runway 24 approach lighting system was improperly identified as the system is actually a modified, nonstandard SALSF. The approach lighting system on Runway 24 is a nonstandard SALSF. The current system has two crossbars, one at 1000' from threshold and another at 1500' from threshold. The first light bar from the threshold is missing. The Wing needs a waiver for this nonstandard configuration.

Lighting circuit is being modified under the runway 06/24 project. This should be funded/awarded in Sep 2009. Estimated Completion Date is Dec 2010.

(2) The runway guard light project (PTFL 06-1058) has been included in the runway 06/24 project. This should be funded/awarded in Sep 2009. Estimated Completion Date is Dec 2010.

(3) The entire 24 approach has been designed (PTFL 04-1004) to include these SALS with sequence flashers along with new crossbar poles and fixture. The runway 24 approach has been included in the runway 06/24 project. This should be funded/awarded in Sep 2009. Estimated Completion Date is Dec 2010.

(4) W/O 42123

(a) Airfield lighting performs regular maintenance on airfield lights and replaces bolts and light fixtures when permitted to affected areas.

(b) Projected awarded to Eastern Construction to replace shoulder and all runway edge lights in May 09. Estimated Completion Date is Nov 2009. PTFL 08-6000

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(c) Exit Lights at Kilo, NW Hotel, and Lima have been installed. Exit lights at Delta exist will be redone under the runway 06/24 project. Estimated Completion Date is Dec 2010.

(d) Complete

(e) Complete

(f) Complete

(5) New taxiway edge lights have been installed. Project is completed.

(6) New aircraft apron lights have been installed. Project is completed.

(7) (Original OCP: second para (1)) Completed.

(7) (Original OCP second para (2)) Several taxiways still require grading due to extensive vegetation and taxiway drop-off on edges.

UFC 3-535-01

(09-KWRI-OCP-004) Functional Area: AFLD

Repeat from 2007 ATSEP (07-WRI-OCP-002).

Runway 18/36 is a non-precision instrument runway but was incorrectly painted as a precision instrument runway. The wing should research its present and future usage and decide what the appropriate course of action should be; i.e., request MAJCOM/A3 waiver or repaint. (AFI 32-1042 and ETL 04-2)

2009 UPDATE:

ATSEP Team recommends closure when the 87 CS will relocates the PAR system to Rwy 18/36 when Rwy 06/24 is closed for re-construction and for US Navy/USMC BRAC aviation unit beddown requirements. AFI 32-1042 and ETL 04-2

(09-KWRI-OCP-005) Functional Area: AFLD

Repeat from 2007 ATSEP. (07-WRI-OCP-006)

Driving lanes around the airfield do not provide adequate wingtip clearance to some aircraft parking areas, and some peripheral taxi lanes adjacent to the driving lines provide zero wingtip clearance for taxiing aircraft. Those areas identified were along Bravo ramp (26' 5" from the edge of the driving lane to the taxi line providing wingtip clearance to any aircraft parked in this area), Alpha ramp (63' 6" from the edge of the driving lane to the taxi line), and Romeo row 1-4 (13' 3" from the edge of the driving lane to the taxi line). A measurement of Lima row showed only 24' 4" from the edge of the road to the wing of a C-17, and the requirement is a minimum of 25'. A thorough risk assessment of potential obstruction hazards associated with vehicular operations within the driving lanes must be conducted. Based on the results of the risk assessment, risk mitigating actions should be promptly implemented. Mitigating actions that should be considered are: removal of affected areas of the driving lanes, increased awareness training through the flightline driving program, posting of additional signs/placards, or other actions to ensure safety of aircraft operations with respect to vehicle operations. (UFC 3-260-01, Table 6.1, items 4 and 6)

2009 UPDATE:

The following aprons remain unchanged, Bravo Row, Alpha Ramp, Romeo Row. The only way to the fix problem is to remove driving lane parallel to taxi way. Lima Row has the C-17 wing tip hanging into the buffer zone and was not fixed during the recent airfield painting project. The

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ramp is very restricted and there is no room available on the ramp to relocate the roads. The wing needs to conduct an ORM and if there is an acceptable risk request waivers to UFC 3-260-01 and AFI 11-218 if they continue using the driving lanes.

UFC 3-260-01 and AFI 11-218

(09-KWRI-OCP-006) Functional Area: ATCALs

According to AMCI 33-116 maintenance control is to upchannel daily ATCALs equipment outage reporting to M/ACCC. Unit is not complying. AMCI 33-116

(09-KWRI-OCP-007) Functional Area: AFLD

The inner marker beacon has batteries that are leaking and inoperative. Last PMI was accomplished 25 March 2009. 31R4-2GRN32-6WC-1

(09-KWRI-OCP-008) Functional Area: AFLD

Repeat from 2003 ATSEP. (07-WRI-OCP-004)

Airfield obstructions were noted on the airfield. The 2002 Air Traffic System Compliance Evaluation Report identified numerous violations that require removal. These items are listed below:

- a. Removal of the telephone pole and concrete post at the inner marker on the approach end of runway 06. The removal of these items will be accomplished under WO 42123. These items should be removed quickly and be accomplished by in-house work force.
- b. Removal of out-of-service arresting system barrier housing located at each runway end. Ten of the 12 arresting system barrier housing shelters are planned to be removed by project PTFL 02-1024, with two being accomplished by taxiway repair projects. These units are located on the edge of the runways and are in the highest priority area defined by Air Force for removal. Continued emphasis by leadership will ensure timely removal. Project PTFL 02-1024 is on the HQ AMC/A7 demo program list at \$150K.
- c. Trees at the RWY24 end clear zone. These trees are being removed by the in-house work force with ECD in Jun 04.
- d. Vent piping on the east and west side of RWY 06/24 will be removed by WO 42183.
- e. A 4-foot-high concrete wall around a drainage culvert on the approach end of Rwy 24. The wall is 354 ft from the extended runway centerline in the graded area of the clear zone. This item is planned for removal by WO 42184.
- f. Concrete culverts between TWY D and E. These are planned to be removed by WO 42184. No schedule for removal is identified.
- g. Concrete protective bollards located near the approach end of RWY 06 must be removed. These are planned to be removed by WO 42123. No schedule for removal is identified.

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An AMC/A7 contractor will visit McGuire later this FY to survey the airfield and note locations of airfield obstructions requiring removal. The BCE POC is scheduling the contractor's visit to the base. We recommend all these removal items be tracked by the AOB until each is removed. (UFC 3-260-01, Airfield and Heliport Planning and Design)

2005 UPDATE:

Several of the deficiencies listed above have been corrected, such as the telephone pole and concrete post at the inner marker approach end of Rwy 06, and the vent piping on the east and west side of Rwy 06/24 (WO 42183). The 4-foot-high concrete wall around a drainage culvert on the approach end of RWY 24 is planned for removal by PTFL 06-1037. Additionally, demolition of one of the abandoned arresting systems has been funded and awaiting execution while the other system (#3 on the HQ AMC/A7 demolition project listing) is still pending funding. These units are located on the edge of the runways and are in the highest priority area defined by Air Force for removal. Furthermore, trees in the runway 24 clear zone are pending funding for removal (PTFL-1014) (UFC-3-260-1).

2007 UPDATE

The base has a project programmed, PTFL 02-1024, to remove the 06/24 Barrier Shacks barriers, but it remains unfunded. Also, project PTFL 06-1037 to remove the 4-foot high concrete wall around a drainage culvert on the approach end of Runway 24 is unfunded. Continue to track the project status of these projects at the AOB until they are removed. (UFC 2-360-01)

2009 UPDATE:

- a. Previously closed
- b. Rwy 18/36 removal complete. Rwy 06/24 Housings being done in Rwy 06/24 runway project (PTFL 02-1024)
- c. Trees identified; Awaiting environmental approvals and Pinelands Permit (State Permit) to begin removal.
- d. Vent piping is schedule 40 PVC. Impact by aircraft will cause pipe to bend out of the aircraft's way; consider it frangible. (closed)
- e. TACAN Road Culvert (PTFL 06-1037) is being accomplished under the Rwy 06/24 project.
- f. Culverts are being removed under the Rwy 06/24 project.
- g. Bollards remain around electrical feed to localizer antenna. Bollards being removed under Rwy 06/24 project and transformers being relocated. UFC 3-260-01

(09-KWRI-OCP-009) Functional Area: AFLD

Repeat from 2003 ATSEP (07-WRI-OCP-003).

McGuire has taken aggressive action to remove on-base trees that violate TERPS and UFC 3-260-01 airfield criteria. With the removal of the trees in runway 24 clear zone, the base trees and vegetation will be in compliance; however, off-base trees on Ft Dix will still penetrate the UFC 3-260-01 airfield criteria and require removal. The base civil engineer has several projects totaling \$2.8M programmed for tree removal on Ft Dix. Recommend the removal of these trees continually be tracked at the AOB. (UFC 3-260-01, Airfield and Heliport Planning and Design)

2005 UPDATE:

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Most of the trees in runway 24 clear zone have been removed and the majority of the remaining trees are located on Ft Dix. The base has developed a plan to systematically remove or trim estimated 600 acres of trees, based on their proximity to runway centerline. These trees violate the approach-departure clearance and/or transitional slope and in some locations are within a few feet of violating TERPS criteria 50:1. The majority of these trees are located on Ft Dix. Project number 04-12132 was funded at \$1.9 million on 07 Dec 05. (UFC 3-260-01, Airfield and Heliport Planning and Design)

2007 UPDATE

Project to remove trees (PTFL04-12132) is funded. This project will remove trees on base and on Ft Dix. The base is coordinating the environmental impact analysis process with Ft Dix for their concurrence to proceed forward to Pinelands Commission for their approval. Once their approval is obtained, the project will be ready to award. Continue to track status and progress at the AOB to ensure tree removal project is executed at the earliest date. Continue to monitor tree growth in these areas and coordinate tree height data with HQ AMC/TERPS to track approach – departure penetrations of UFC 3-260-01 and TERPS criteria so appropriate NOTAMS can be issued until the trees are removed. (UFC 3-260-1)

2009 UPDATE

All of the trees in Runway 18 clear zone have been removed and the majority of the remaining trees are located on Fort Dix. A small amount of trees in Runway 24 clear zone located on McGuire, but the predominance of these trees are located at Fort Dix. McGuire is requesting a permit from the State of New Jersey, Pineland's Commission in order to the remaining trees on its current property. Additionally, when Fort Dix property is combined under joint basing a second permit will be requested for removal trees on this property. While waiting for the Fort Dix permitting process to be completed, the remaining trees on McGuire will be removed as long as required permit has been received. It's estimated that the trees on McGuire will be remove by 1 Jan 10. (UFC 3-260-01)

(09-KWRI-OCP-010)

Functional Area: ATCSS

Restricted area R-5001 is not accurately depicted on the RAPCON radar map. The Restricted Area is divided into two vertical sections (R5001A & R5001B). The radar map shows only the lateral boundaries of R-5001A. This does not provide controllers with an accurate representation that reflects areas with different effective altitudes. FLIPs

(09-KWRI-OCP-011)

Functional Area: AM

Repeat from 2007 ATSEP. Inspection of unit flightline driving programs (Guard and Reserve units as selected by the Base Flightline Driving Program Manager) revealed a significant number of personnel who are not receiving annual refresher training. A sampling of the two units inspected revealed that up to 1/3 of assigned personnel have expired annual refresher training. These problems will likely continue if changes are not made at the ANG and Reserve Headquarters level. Results of these visits were briefed to the applicable ANG/ARC office per previous agreement. HQ AMC/A3A will also follow up with HQ AFRC/A3VA and NGB/A30S to recommend special attention on flightline driving be placed in their applicable ATSEP evaluations. The McGuire AM staff must continue to work with local Reserve and Guard units for more strict compliance. (AFI 13-213, para 4.4.9.)

2009 Update: See Observation 09-KWRI-001. AFI 13-213

(09-KWRI-OCP-012) Functional Area: AFLD

Repeat from 2003 ATSEP (07-WRI-OCP-007). Rwy 18/36 lacks runway overruns and shoulders. Until discrepancy is resolved, waivers must be processed.

2005 UPDATE:

- Title: Rwy 18/36 Improvements - Project Number: PTFs 941149, 941152, 941148
- Wing Priority Number: Unfunded - Cost: \$1.618M - Source of Funding: O&M
- Waiver is being processed and info is included in flight publications (UFC-3-260-1, Chapter 3)

2007 UPDATE:

All projects (PTFL 941149 Rwy 18 Overrun, P41152 Rwy 36 overrun, and 941148 Rwy shoulders) remain on the wing unfunded list.

2009 UPDATE:

A project to repair shoulders has been awarded. Project to begin May 2009. Project Number: PTF 80-6000. The overrun project will be a MILCON project.
UFC 3-260-01

(09-KWRI-OCP-013) Functional Area: AFLD

A family of foxes has been allowed to habituate on the airfield, without documentation that proper level of authority has accepted the risk. No documentation was seen that wing leadership accepts the risk of a wildlife/aircraft strike in order to gain the stated advantage of having a rodent predator live on the airfield. AFI 91-202

(09-KWRI-OCP-014) Functional Area: CE

Repeat from 2007 ATSEP: (07-WRI-OCP-010)

The annual airfield waiver package has not been submitted to HQ AMC/A7P within established timeframe (June 07). The revised airfield waiver package was provided to the HQ AMC/A7PI representative during this evaluation. Furthermore, the E-series maps are not to standards; i.e., do not depict tree height and location, etc. The base CE office is completing the E-series maps and will forward them to HQ AMC/A7P for approval within 60 days. (MAJCOM checklist CE007, AFI 13-213, para 2.1.2.25.1, and UFC 3-260-01, para. 2.2.6.42 and 2.1.6.4.3)

2009 UPDATE:

McGuire's airfield waiver package appears to be correct. However, their corresponding E-tab series maps are missing critical data, which is required so that HQ AMC can complete their review of their waiver package. Furthermore, these E-tab series maps are not depicting tree heights and location properly. The base CE office is completing their 2009 review of their E-tab series maps and will forward them to HQ AMC/A7P for approval.

UFC 3-260-01

Section IV - General Information

a. REPLY INSTRUCTIONS:

Replies are required on observations and problems (including off-checklist) IAW AFI 13-218. The OG/CC, or equivalent, shall convene the Airfield Operations Board (AOB) within 30 days after receiving this report to address observations, problems and actions necessary to resolve deficiencies. AOB minutes shall reflect action taken or anticipated for each observation, including an office of primary responsibility (OPR) and an estimated closure date. Status of each open observation shall be reflected in subsequent AOB minutes until the core issues that warranted the observation have been resolved and a management control plan or action has been implemented to prevent recurrence. Recommendations for observation closure will be noted in AOB minutes and forwarded to HQ AMC/A3A for review and coordination with the observation closure approval authority, HQ AMC/A3.

HQ AMC/A3A is the closure authority for problems and off-checklist problems. The AOF/CC shall initiate closure requests in writing to the AMC Airfield Operations staff that includes actions taken to resolve deficiencies and measures implemented or planned to prevent recurrence.

b. AIR TRAFFIC SYSTEM ENVIRONMENT: McGuire AFB is home to 87th Air Base Wing, 305th Air Mobility Wing, 514th Air Mobility Wing (Air Force Reserve), 108th Air Refueling Wing (ANG), 621st Contingency Response Wing, 21st Expeditionary Mobility Task Force, and is in the process of becoming Joint Base McGuire-Dix-Lakehurst. As such the 87 ABW has responsibility for civil engineering and communications support for the airfield and air traffic control, which airfield operations remains the function of the 305 AMW. Additionally, the 305 AMW is in the process of assuming operational control of airfield operations at Naval Air Engineering Station Lakehurst. There are two KC-10 air refueling squadrons (plus two reserve associates), two KC-135 air refueling squadrons (ANG), and one C-17 airlift squadron (plus one reserve associate) assigned to McGuire AFB. The McGuire air traffic system consists of a VFR control tower with a Class D surface area, a radar approach control with class E airspace, and a military/DOD civilian airfield management operation. McGuire also provides ATC services to 11 satellite airports. Adjacent FAA air traffic facilities include Philadelphia Approach, New York TRACON, and Atlantic City Approach, New York Center, and Washington Center.

Air Traffic System Equipment and Configuration:

Visual Flight Rules (VFR) Control Tower:

- AN FSQ204 (STARS) Tower Display Workstation
- Enhanced Terminal Voice Switch (ETVS)
- Digital Automatic Terminal Information Service
- Information Distribution System 5 (IDS-5)
- AN/FMQ-19 Weather Sensor/ Direct read Equipment
- Local Weather Network System (LWNS)
- Digital Voice Recording System

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Touchscreen Airfield Lighting Computer System (ALCS)
Digital Voice Recording System (DVRS)
Tower Simulation System (TSS)
GRT-21/22 - VHF/UHF Transmitter
GRR-23/24 - VHF/UHF Receiver
GRC-171/211 - VHF/UHF Transceiver

Radar Approach Control (RAPCON)
AN/GPN-30 DASR
ETVS
AN FSQ204 (STARS)
AN/GSH-72 Digital Voice Recorder
Flight Data Input/Output (FDIO)
AN/FMQ-19 Weather Sensor/ Direct read Equipment
GRT-21/22 - VHF/UHF Transmitter
GRR-23/24 - VHF/UHF Receiver
GRC-171/211 - VHF/UHF Transceiver

Navigational Aids:
AN/FRN-45 TACAN
AN/GRN-29 Instrument Landing Systems (2)
MPN-25 Mobile Precision Approach Radar

Traffic Count:
Control Tower FY08 40,481
RAPCON FY08 96,361

c. PERSONNEL CONTACTED:

Col Gina Grosso
87 ABW/CC

Col Scott Smith
305 AMW/CC

Lt Col Robert Licciardi
87 CS/CC

Lt Col Craig Cole
87 CES/CC

Lt Col Robert Liccardi
87 CS/CC

Lt Col Timothy McGregor
2 ARS/CC

Lt Col David Mott
305 AMW/SE

Lt Col Geoffrey Norton
305 OSS/CC

Lt Col John Price
6 AS/CC

Lt Col Michael Rickard
32 ARS/CC

Capt Doug Steinert

Capt Alfonza Howard

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87 CS/SCQ

Capt Andy Konhaeser
87 CS/SCO

Capt Eric Roehrkasse
305 OSS/OSA

2Lt Trevyn Guglielmo
87 CES/CEOS

SMSgt Kevin Clayton
305 OSS/OSAB

SMSgt John ODonnell
87 CS/SCO

MSgt Michael Rosado
87 CS/SCQ

MSgt Whiting
87 CEOH

MSgt Perry
87 CES/CEOF

TSgt Christopher Kellett
87 CS/SCQ

TSgt Robert Edgell
87 CS/SCOAR

TSgt Simon
305 OSS/OSAM

TSgt McAndrew
621 CRW

TSgt Krebs
305 OSS/OSAD

SSgt Marsha Powell
87 CS/SCQ

SSgt Bryan Greenwood
305 OSS/OSAB

87 CS/SCX

Capt Clint Palmer
305 AMW/SEF

Capt Justin Rex
305 OSS/OSA

CMSgt Robin Cruz
305 OSS/OSAB

SMSgt Lanola
108 ANG

MSgt Nathan Kilcollins
305 OSS/OSAB

MSgt Jim Wotring
87 CS/SCOAR

MSgt Craig
87 CES/CEOF

MSgt Micheal Eichman
87 CS/SCOAW

TSgt Anthony Brown
305 OSS/OSAB

TSgt Joann Grieb
87 CS/SCOAW

TSgt Gallo
87 CES

TSgt Matthew Sandner
305 OSS/OSAD

SSgt Jorge Familia
87 CS/SCOAW

SSgt Joyce Masters
87 CS/SCQ

SSgt Matthew Zimmerman
87 CS/SCOAR

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SSgt Claudia McCain
87 CS/SCOAR

SSgt Krystal Warren
87 CS/SCOAR

SSgt Donald Foster
87 CS/SCOAW

SSgt Thomas DeVito
87 CS/SCOAW

SSgt Person
87 CES/CEOFP

SSgt Abson
87 CES/CEOFP

SSgt Burns
87 SFS/S3T

SSgt Pedersen
87 SFS/S3T

SSgt Morrison
305 OSS/OSAM

SSgt Jennifer Morales
305 OSS/OSAD

SSgt Griggs
305 OSS/OSAD

SSgt Andrews
305 OSS/OSAD

SSgt Giordano
305 OSS/OSAD

SSgt Bartley
305 OSS/OSAD

SSgt Reid
305 OSS/OSAD

SSgt Shumway
305 OSS/OSAD

SSgt Andrews
305 OSS/OSAD

SrA Darrel McDougal
87 CS/SCOAW

SrA Carbone
305 OSS/OSAD

SrA Buckland
305 OSS/OSAD

SrA McKenna
305 OSS/OSAD

SrA Anderson
305 OSS/OSAD

SrA Boren
305 OSS/OSAD

A1C Leland Ellis
87 CS/SCOAR

A1C Smith
87 CES/CEOHP

A1C Schulz
305 OSS/OSAD

Mrs. Gail Swider
FAA-PHL

Mrs. Kissel
305 OSS/OSAM

Mr. John Figgins
HQ AMC/A3AT

Mr. Michael
87 CES/CEOHP

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Lieutenant Commander Hastie
NEAS Lakehurst

Mr. Jerry Atterholt
FAA-PHL

Mr. Rich Heckman
FAA-PHL

Chief Petty Officer Crowhurst
Chief Controller NAES Lakehurst Tower

Mr. Archer
87 CES/CD

Mr. Garron
87 CES/CEO

Mr. Gaskill
87 CES/CEOSS

Mr. Reed
87 CES/CEOSS

Mr. Burford
87 CES/CEOFE

Mr. Lyman
87 CES/CEP

Mr. Rola
87 CES/CEPM

Mr. Dean
87 CES/CEAO

Mr. Case
87 CES/CEOFE

Mr. Barnes
Falcon Environmental Services (BASH
Contract)

Mr. Chew
305 OSS/OSAD

Mr. Richard Marnin, yes, THAT Rich Marnin
305 OSS/OSAD

Mr. Watson
305 OSS/OSAD

Mr. Duncan
305 OSS/OSAD

Mr. Woodward
305 OSS/OSAD

Mr. Duncan
305 OSS/OSAD

Distribution:

87 ABW/CC	1
305 AMW/CC	1
HQ USAF/A3O-AC	1
HQ AFFSA/A3A	1
HQ AFFSA/A3/8	1
HQ AMC/A3A	1
HQ AMC/A6O	1
HQ AMC/A6OS	1
HQ AMC/A7P	1
HQ AMC/A7PI	1
HQ AMC/A7O	1
HQ AMC/SEF	1
HQ PACAF/A3A	1
HQ USAFE/A3FY	1
HQ AFMC/A3O	1
HQ AFSOC/A3OF	1
HQ ACC/A3AO	1
HQ AFSPC/A3RA	1
HQ AETC/A3OF	1
HQ AFRC/DOVA	1
HQ NGB/A3F	1
FAA AFREP	1
FAA ATREP	1

Appendix B
NDEL Letter



**DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR MOBILITY COMMAND
JOINT BASE MCGUIRE-DIX-LAKEHURST**

NOV 25 2000

Colonel Gina M. Grosso
JB MDL/CC
2901 Falcon Lane, Suite 100
Joint Base McGuire-Dix-Lakehurst NJ 08641

John C. Stokes
Executive Director
NJ Pinelands Commission
Post Office Box 7
New Lisbon NJ 08064

Re: Tree Clearing for Airfield Safety at Joint Base McGuire-Dix-Lakehurst

Dear Mr. Stokes

Joint Base McGuire-Dix-Lakehurst (JB MDL) operates two runways, 06-24 and 18-36, on the McGuire portion of the JB. These runways have been in existence since the base opened in 1945. The Air Force has Primary Surface and Runway Clear Zone airfield safety standards that regulate allowable objects in these areas, including vegetation. The Primary Surface is the safety area within 1,000 feet of the runway centerline. Runway Clear Zones airfield safety standards are areas located at the ends of each runway. These areas possess a high potential for accidents and the areas must be maintained in a manner that is compatible with aircraft operations. Due to a combination of funding constraints and the presence of wetlands, JB MDL has not been able to perform vegetation management. The trees in the Primary Surface and Runway Clear Zones have grown beyond the maximum height allowed by the Air Force safety standards and, as a result, pose a serious safety hazard.

In order to address the non-compliant areas, JB MDL will execute a contract to have the trees in the Runway Clear Zones and the Primary Surface cut to within three inches of the ground. The contract will direct tree cutting in wetlands and wetland transition areas. Machinery will be used to cut and remove the trees from the site.

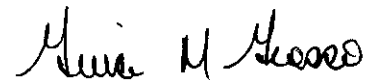
We understand that a Pinelands permit for work in the wetlands and the transition area would normally be required if there were fill material or soil disturbance in those areas. The base will employ matting to limit damage to ground surface in the wetlands. Stumps and root systems will not be removed from the wetlands or transition areas. Because there is no net loss of wetlands expected under this project, no mitigation of wetlands is anticipated.

Based on the operational requirements to maintain the Primary Surface and Runway Clear Zones, the Air Force has determined that an application to the Pinelands Commission for approval of this project would be incompatible with national defense requirements to have safety violations corrected as soon as possible. In accordance with N.J.A.C. 7:50-4.52(d), this project

is mission critical for national defense requirements and the Pinelands Commission review of this project is hereby waived.

Although an application for the Pinelands Commission will not be submitted, any other permits and approvals required, such as a Freshwater Wetlands General Permit 9, will be submitted through the New Jersey Department of Environmental Protection. Please contact Mr. Joseph Rhyner PE, 87 CES/CEAN, at (609) 754-6166 for any additional information regarding this project.

Sincerely

A handwritten signature in black ink, appearing to read "Gina M. Grosso".

GINA M. GROSSO, Col, USAF
Commander

cc:

Alice Veneziani, 87 ABW/JAV
Christopher Archer, 87 CES/CD
Ken Smith, 87 CES/CEAN
Roger Smith, 87 CES/CEAN
Joseph Rhyner, 87 CES/CEAN

Appendix C

New Jersey State Historic Preservation Office Correspondence



Shaw Environmental, Inc.

Shaw Environmental, Inc.

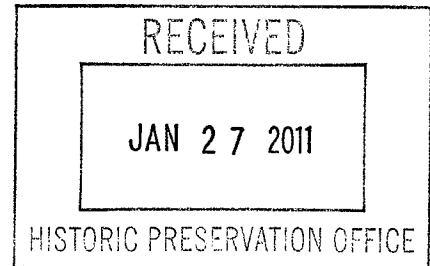
200 Horizon Center Blvd
Trenton, New Jersey 08691

609-584-8900

FAX: 609-588-6399

January 24, 2011

State of New Jersey
Department of Environmental Protection
Historic Preservation Office
PO Box 420
Trenton, NJ 08625-0420



HPD - B2011-18
HPD Project # 11-0658-1 JR

**RE: Joint Base McGuire-Dix-Lakehurst, Tree Clearing for Airfield Safety
Environmental Assessment**

Dear Historic Preservation Officer:

Attached for your review and approval is the Environmental Assessment for the Tree clearing project at Joint Base McGuire-Dix -Lakehurst. The project involves the clearing of a wooded area adjacent to the existing runway so as to be in compliance with US Air Force safety regulations. All trees will be cut near grade and remaining stumps will be ground in place to grade. No soil excavation will be conducted. The area will be maintained as open space with regular mowing and cutting.

In review of the NJDEP Historical Database (attached) and the Joint Base Historic Plan there are no known historical sites within the project area. Since the project does not involve soil disturbance other than the travel of maintenance equipment, no impacts would be expected to any areas potentially containing historical material and therefore a formal 106 Phase 1 Review should not be required.

If you have any questions or comments concerning this document or the project please call me at (609) 588 6345.

Respectfully,

Ronald W. Prann, Ph.D., PWS
Shaw Environmental, Inc.

As proposed, the project will not adversely affect historic properties. Pursuant to 800.5(c), if no consulting parties object to this finding within the 30 day review period, the project may proceed, as proposed, unless resources are discovered during project implementation, pursuant to 800.13.

Daniel D. Saunders/Km
Daniel D. Saunders
Deputy State Historic Preservation Officer

2/7/2011
Date

cc: Roger Smith, Fort Dix



Shaw Environmental, Inc.

Shaw Environmental, Inc.

200 Horizon Center Blvd
Trenton, New Jersey 08691
609-584-8900
FAX: 609-588-6399

January 24, 2011

State of New Jersey
Department of Environmental Protection
Historic Preservation Office
PO Box 420
Trenton, NJ 08625-0420

**RE: Joint Base McGuire-Dix-Lakehurst, Tree Clearing for Airfield Safety
Environmental Assessment**

Dear Historic Preservation Officer:

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If you have any questions or comments concerning this document or the project please call me at (609) 588 6345.

Respectfully,

Ronald W. Prann, Ph.D., PWS
Shaw Environmental, Inc.



Mount Holly Township

Burlington County Prison (NHL, ID#841)

128 High Street

NR: 6/24/1986 (NR Reference #: 86003558)

Camden and Burlington County Railroad (ID#4588)

Right of way between Camden City, Camden and Mt. Holly Township, Burlington.

SHPO Opinion: 2/22/2006

Also located in:

Burlington County, Hainesport Township
Burlington County, Maple Shade Township
Burlington County, Moorestown Township
Burlington County, Mount Laurel Township
Camden County, Camden City
Camden County, Merchantville Borough
Camden County, Pennsauken Township

Mount Holly Historic District (ID#842)

Mill, Pine, High, Garden, White, Union, Bispham, Madison, Buttonwood, Branch, Church and Ridgway streets; Park Drive and Commerce Place

NR: 2/20/1973 (NR Reference #: 73001084)

SR: 8/7/1972

Old Schoolhouse (ID#4848)

35 Brainerd Street

NR: 11/26/2008 (NR Reference #: 08001108)

SR: 9/16/2008

605 County Route 541 (ID#843)

605 County Route 541

SHPO Opinion: 11/25/1981

Mount Laurel Township

Archaeological Site (28-Bu-165) (ID#844)

SHPO Opinion: 10/17/1984

Archaeological Site (28-Bu-169) (ID#845)

SHPO Opinion: 10/17/1984

Archaeological Site (28-Bu-241) (ID#846)

SHPO Opinion: 4/24/1992

Archaeological Site (28-Bu-309) (ID#2995)

SHPO Opinion: 1/16/1992

(Previous SHPO Opinion 4/10/91)

Archaeological Site (28-Bu-343) (ID#847)

SHPO Opinion: 10/21/1988

Archaeological Site (28-Bu-348) (ID#1420)

SHPO Opinion: 10/21/1988

Archaeological Site (28-Bu-440) (ID#2996)

SHPO Opinion: 11/21/1995

Camden and Burlington County Railroad (ID#4588)

Right of way between Camden City, Camden and Mt. Holly Township, Burlington.

SHPO Opinion: 2/22/2006

See Main Entry / Filed Location:

Burlington County, Mount Holly Township

Caryatid Prehistoric Site (28-Bu-276) (ID#2990)

SHPO Opinion: 2/27/1987

Thomas Smith House (General Clinton House) (ID#848)

1645 Hainesport-Mount Laurel Road

NR: 9/27/1990 (NR Reference #: 90001437)

SR: 1/22/1990

Evesham Friends Meeting House (ID#849)

Located at junction of Moorestown-Mt. Laurel Road and Evesboro Road

NR: 4/22/1982 (NR Reference #: 82003268)

SR: 4/21/1981

Farmers Hall (ID#850)

Corner of Hainesport-Mount Laurel Road and Moorestown-Mount Laurel Road

NR: 8/1/1979 (NR Reference #: 79003248)

SR: 3/10/1976

Hemlock Hall (ID#3893)

134 Hartford Road

SHPO Opinion: 7/7/1997

Jacob's Chapel AME Church (ID#49)

318 Elbo Lane

COE: 4/18/2000

Alice Paul Birthplace (NHL, ID#851)

118 Hooten Road

NR: 7/5/1989 (NR Reference #: 89000774)

SR: 5/22/1989

Perglacial Basin Site (ID#3808)

SHPO Opinion: 2/25/1997

Sunnyside Farm (ID#4903)

142 Hooten Road

COE: 5/5/2009

Votta Farm House Site (ID#3807)

SHPO Opinion: 2/25/1997

William Woolman House (ID#3894)

3015 Mame Highway

SHPO Opinion: 3/12/1998

New Hanover Township

Archaeological Site (28-Bu-458) (ID#2998)

SHPO Opinion: 4/12/1996

Archaeological Site (28-Bu-459) (ID#2999)

SHPO Opinion: 4/12/1996



General Edward S. Godfrey House (ID#3000)

27 Main Street

NR: 2/28/1997 (NR Reference #: 97000064)

SR: 12/30/1996

Hanover Furnace [Site] (ID#852)

NR: 3/1/1974 (NR Reference #: 74001155)

SR: 6/15/1973

Also located in:

Burlington County, Pemberton Township

Historic Site (28-Bu-542) (ID#4971)

SHPO Opinion: 5/24/2010

Historic Site (28-Bu-473) (ID#358)

SHPO Opinion: 1/7/1998

Building 1907, S.A.G.E. (ID#3671)

McGuire Air Force Base

SHPO Opinion: 2/9/1994

Scott Plaza Family Housing Area Historic District (ID#4882)

Scott Plaza and Alabama Avenue, Fort Dix

SHPO Opinion: 3/7/2003

WWII Temporary Wooden Buildings (ID#853)

Fort Dix

SHPO Opinion: 6/7/1996

(Expands included buildings from previous SHPO Opinion of 2/25/94.)

North Hanover Township

Arneytown Historic District (ID#854)

Province Line Road (Ellisdale-Arneytown Road) and Chesterfield-Arneytown Road

NR: 12/12/1977 (NR Reference #: 67451850)

SR: 12/26/1974

Also located in:

Monmouth County, Upper Freehold Township

Palmyra Borough

Camden and Amboy Railroad Main Line Historic District (ID#2970)

Camden and Amboy Railroad right-of-way

SHPO Opinion: 6/26/1975

(Boundary clarified 10/4/91. Extends through thirty-one municipalities in four counties.)

See Main Entry / Filed Location:

Burlington County, Bordentown City

Cinnaminson Avenue and Spring Garden Street Schools (ID#855)

Spring Garden Street, between Cinnaminson and Parry avenues

NR: 5/29/1992 (NR Reference #: 92000635)

SR: 4/3/1992

COE: 12/15/1990

Pemberton Borough

Job Gaskill House (ID#4224)

53 West Hampton Street

SHPO Opinion: 9/17/2003

Morris Mansion and Mill (ID#856)

Hanover Street and Rancocas Creek

NR: 9/13/1977 (NR Reference #: 77000855)

SR: 11/26/1973

Pemberton Historic District (ID#858)

Portions of Budd Avenue; Early Alley; Jarvis, Hanover, Hough, Egbert, Davis, Mary, Antis, Elizabeth, Early, Pemberton, Jane, Reeves, Reynolds, and St. John streets

NR: 3/22/1989 (NR Reference #: 88000688)

SR: 10/7/1987

Pemberton Township

Birmingham School (ID#859)

Birmingham Road

NR: 12/31/1992 (NR Reference #: 92001683)

SR: 11/2/1992

COE: 4/27/1992

(Destroyed by fire, July 1993)

Evergreen Park Mental Hospital (ID#3002)

Pemberton-Browns Mills Road (County Route 530)

DOE: 7/18/1988

SHPO Opinion: 5/8/1987

(Demolished)

Fenwick Manor (ID#861)

15 Springfield Road

NR: 10/25/1990 (NR Reference #: 90001549)

SR: 9/7/1990

Hanover Furnace [Site] (ID#852)

NR: 3/1/1974 (NR Reference #: 74001155)

SR: 6/15/1973

See Main Entry / Filed Location:

Burlington County, New Hanover Township

Benjamin Jones House (ID#862)

Pemberton-Browns Mills Road

NR: 11/30/1982 (NR Reference #: 82001042)

SR: 9/29/1982

Mirror Lake and Dam, and remains of pump house and power house (ID#3004)

SHPO Opinion: 9/8/1992

North Pemberton Railroad Station (ID#863)

Hanover Street and Penn Central Railroad

NR: 5/23/1978 (NR Reference #: 78001746)

SR: 12/19/1977

Appendix D
Threatened and Endangered Species Information



State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

Division of Parks and Forestry
Office of Natural Lands Management
Natural Heritage Program
P.O. Box 404
Trenton, NJ 08625-0404
Tel. #609-984-1339
Fax. #609-984-1427

LISA P. JACKSON
Commissioner

May 9, 2006

Denise Page
Shaw Environmental, Inc.
200 Horizon Center Boulevard
Trenton, NJ 08691

Re: McGuire AFB Airfield (Block 15, Lot 1)

Dear Ms. Page:

Thank you for your data request regarding rare species information for the above referenced project site in New Hanover Township, Burlington County.

Searches of the Natural Heritage Database and the Landscape Project (Version 2) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the topographic map(s) submitted with the Request for Data into our Geographic Information System. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Natural Heritage Database and the Landscape Project habitat mapping for occurrences of any rare wildlife species or wildlife habitat on the referenced site. Please see Table 1 for species list and conservation status.

Table 1 (on referenced site).

Common Name	Scientific Name	Federal Status	State Status	Grank	Srank
a silver-bordered fritillary	<i>Boloria selene myrina</i>		T	G5T5	S2
arogos skipper	<i>Atrytone arogos arogos</i>		E	G3G4T1T2	S1
bald eagle nest buffer	<i>Haliaeetus leucocephalus</i>	LT	E	G4	S1B,S2N
barred owl	<i>Strix varia</i>		T/T	G5	S3B
coastal plain milk snake	<i>Lampropeltis triangulum triangulum</i> x <i>L. t. elapsoides</i>		Special Concern		
dotted skipper	<i>Hesperia attalus slossonae</i>		Special Concern	G3G4T3	S2S3
eastern box turtle	<i>Terrapene carolina</i>		Special Concern	G5	S5B
eastern kingsnake	<i>Lampropeltis g. getula</i>		U	G5T5	S3
grasshopper sparrow	<i>Ammodramus savannarum</i>		T/S	G5	S2B
great blue heron	<i>Ardea herodias</i>		S/S	G5	S2B,S4N
northern pine snake	<i>Pituophis m. melanoleucus</i>		T	G4T4	S3
pine barrens treefrog	<i>Hyla andersonii</i>		T	G4	S3
pink streak	<i>Faronta rubripennis</i>			G3G4	S3
savannah sparrow	<i>Passerculus sandwichensis</i>		T/T	G5	S2B,S4N
timber rattlesnake	<i>Crotalus h. horridus</i>		E	G4T4	S2
two-spotted skipper	<i>Euphyes bimacula</i>		Special Concern	G4	S3
upland sandpiper	<i>Bartramia longicauda</i>		E	G5	S1B

We have also checked the Natural Heritage Database and the Landscape Project habitat mapping for occurrences of any rare wildlife species or wildlife habitat within 1/4 mile of the referenced site. Please see Table 2 for species list and conservation status. This table excludes any species listed in Table 1.

Table 2 (additional species within 1/4 mile of referenced site).

Common Name	Scientific Name	Federal Status	State Status	Grank	Srank
northern parula	<i>Parula americana</i>		Special Concern	G5	S3B

We have also checked the Natural Heritage Database for occurrences of rare plant species or ecological communities. The Natural Heritage Database has records for occurrences of *Oldenlandia uniflora* and *Juncus greenii* that may be in the immediate vicinity of the site. The attached list provides more information about these occurrences. **Because some species are sensitive to disturbance or sought by collectors, this information is provided to you on the condition that no specific locational data are released to the general public. This is not intended to preclude your submission of this information to regulatory agencies from which you are seeking permits.**

Also attached is a list of rare species and ecological communities that have been documented from Burlington County. If suitable habitat is present at the project site, these species have potential to be present.

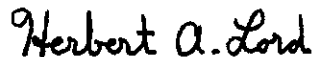
Status and rank codes used in the tables and lists are defined in the attached EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS.

If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive I-Map-NJ website at the following URL, <http://www.state.nj.us/dep/gis/depsplash.htm> or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program.

PLEASE SEE THE ATTACHED 'CAUTIONS AND RESTRICTIONS ON NHP DATA'.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,



Herbert A. Lord
Data Request Specialist

cc: Robert J. Cartica
Lawrence Niles
NHP File No. 06-4007415

CAUTIONS AND RESTRICTIONS ON NATURAL HERITAGE DATA

The quantity and quality of data collected by the Natural Heritage Program is dependent on the research and observations of many individuals and organizations. Not all of this information is the result of comprehensive or site-specific field surveys. Some natural areas in New Jersey have never been thoroughly surveyed. As a result, new locations for plant and animal species are continuously added to the database. Since data acquisition is a dynamic, ongoing process, the Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of New Jersey. Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The attached data is provided as one source of information to assist others in the preservation of natural diversity.

This office cannot provide a letter of interpretation or a statement addressing the classification of wetlands as defined by the Freshwater Wetlands Act. Requests for such determination should be sent to the DEP Land Use Regulation Program, P.O. Box 401, Trenton, NJ 08625-0401.

The Landscape Project was developed by the Division of Fish & Wildlife, Endangered and Nongame Species Program in order to map critical habitat for rare animal species. Natural Heritage Database response letters will also list all species (if any) found during a search of the Landscape Project. However, this office cannot answer any inquiries about the Landscape Project. All questions should be directed to the DEP Division of Fish and Wildlife, Endangered and Nongame Species Program, P.O. Box 400, Trenton, NJ 08625-0400.

This cautions and restrictions notice must be included whenever information provided by the Natural Heritage Database is published.



NJ Department of Environmental Protection
Division of Parks and Forestry

Natural Lands Management

Immediate Vicinity of Project Site
Based on Search of Natural Heritage Database
Rare Plant Species and Ecological Communities Currently Recorded in
the New Jersey Natural Heritage Database

Scientific Name	Common Name	Federal Status	State Status	Regional Status	G Rank	S Rank	Last Obs	Ident	Location
Vascular Plant									
<i>Juncus greenei</i>	Greene's Rush			HL	G5	S2	1994-10-06	Y	ALONG WEST SIDE OF TRIBUTARY TO SOUTH RUN, 1.3 MILES SSW OF INTERSECTION OF BROWNS MILLS-COOKSTOWN ROAD WITH WRIGHTSTOWN-COOKSTOWN RD., AND APPROXIMATELY 0.15 MILES WEST OF SEWAGE TREATMENT FACILITY, MCGUIRE AIR FORCE BASE.
<i>Oldenlandia uniflora</i>	Clustered-blueets			HL	G5	S3	1994-10-06	Y	SOUTH OF ARCHERY RANGE, SOUTH OF SOUTH RUN, APPROXIMATELY 1.3 MILES SW OF JCT. BROWNS MILLS ROAD-COOKSTOWN ROAD AND WRIGHTSTOWN-COOKSTOWN ROAD, COOKSTOWN AND APPROXIMATELY 0.2 MILES WEST OF SEWAGE TREATMENT FACILITY, MCGUIRE AIR FORCE BASE.

2 Records Selected

EXPLANATIONS OF CODES USED IN NATURAL HERITAGE REPORTS

FEDERAL STATUS CODES

The following U.S. Fish and Wildlife Service categories and their definitions of endangered and threatened plants and animals have been modified from the U.S. Fish and Wildlife Service (F.R. Vol. 50 No. 188; Vol. 61, No. 40; F.R. 50 CFR Part 17). Federal Status codes reported for species follow the most recent listing.

- LE Taxa formally listed as endangered.
- LT Taxa formally listed as threatened.
- PE Taxa already proposed to be formally listed as endangered.
- PT Taxa already proposed to be formally listed as threatened.
- C Taxa for which the Service currently has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.
- S/A Similarity of appearance species.

STATE STATUS CODES

Two animal lists provide state status codes after the Endangered and Nongame Species Conservation Act of 1973 (NSSA 23:2A-13 et. seq.): the list of endangered species (N.J.A.C. 7:25-4.13) and the list defining status of indigenous, nongame wildlife species of New Jersey (N.J.A.C. 7:25-4.17(a)). The status of animal species is determined by the Nongame and Endangered Species Program (ENSP). The state status codes and definitions provided reflect the most recent lists that were revised in the New Jersey Register, Monday, June 3, 1991.

- D Declining species—a species which has exhibited a continued decline in population numbers over the years.
- E Endangered species—an endangered species is one whose prospects for survival within the state are in immediate danger due to one or many factors – a loss of habitat, over exploitation, predation, competition, disease. An endangered species requires immediate assistance or extinction will probably follow.
- EX Extirpated species—a species that formerly occurred in New Jersey, but is not now known to exist within the state.
- I Introduced species—a species not native to New Jersey that could not have established itself here without the assistance of man.
- INC Increasing species—a species whose population has exhibited a significant increase, beyond the normal range of its life cycle, over a long term period.
- T Threatened species—a species that may become endangered if conditions surrounding the species begin to or continue to deteriorate.
- P Peripheral species—a species whose occurrence in New Jersey is at the extreme edge of its present natural range.
- S Stable species—a species whose population is not undergoing any long-term increase/decrease within its natural cycle.
- U Undetermined species—a species about which there is not enough information available to determine the status.

Status for animals separated by a slash(/) indicate a dual status. First status refers to the state breeding population, and the second status refers to the migratory or winter population.

Special Concern applies to animal species that warrant special attention because of some evidence of decline, inherent vulnerability to environmental deterioration, or habitat modification that would result in their becoming a Threatened species. This category would also be applied to species that meet the foregoing criteria and for which there is little understanding of their current population status in the state.

Plant taxa listed as endangered are from New Jersey's official Endangered Plant Species List N.J.S.A. 131B-15.151 et seq.

E Native New Jersey plant species whose survival in the State or nation is in jeopardy.

REGIONAL STATUS CODES FOR PLANTS AND ECOLOGICAL COMMUNITIES

LP Indicates taxa listed by the Pinelands Commission as endangered or threatened within their legal jurisdiction. Not all species currently tracked by the Pinelands Commission are tracked by the Natural Heritage Program. A complete list of endangered and threatened Pineland species is included in the New Jersey Pinelands Comprehensive Management Plan.

HL Indicates taxa or ecological communities protected by the Highlands Water Protection and Planning Act within the jurisdiction of the Highlands Preservation Area.

EXPLANATION OF GLOBAL AND STATE ELEMENT RANKS

The Nature Conservancy has developed a ranking system for use in identifying elements (rare species and natural communities) of natural diversity most endangered with extinction. Each element is ranked according to its global, national, and state (or subnational in other countries) rarity. These ranks are used to prioritize conservation work so that the most endangered elements receive attention first. Definitions for element ranks are after The Nature Conservancy (1982: Chapter 4, 4.1-1 through 4.4.1.3-3).

GLOBAL ELEMENT RANKS

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout its range; with the number of occurrences in the range of 21 to 100.

G4 Apparently secure globally; although it may be quite rare in parts of its range, especially at the periphery.

G5 Demonstrably secure globally; although it may be quite rare in parts of its range, especially at the periphery.

GH Of historical occurrence throughout its range i.e., formerly part of the established biota, with the expectation that it may be rediscovered.

GU Possibly in peril range-wide but status uncertain; more information needed.

GX Believed to be extinct throughout range (e.g., passenger pigeon) with virtually no likelihood that it will be rediscovered.

G? Species has not yet been ranked.

GNR Species has not yet been ranked.

STATE ELEMENT RANKS

- S1** Critically Imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Elements so ranked are often restricted to very specialized conditions or habitats and/or restricted to an extremely small geographical area of the state. Also included are elements which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are elements for which, even with intensive searching, sizable additional occurrences are unlikely to be discovered.
- S2** Imperiled in New Jersey because of rarity (6 to 20 occurrences). Historically many of these elements may have been more frequent but are now known from very few extant occurrences, primarily because of habitat destruction. Diligent searching may yield additional occurrences.
- S3** Rare in state with 21 to 100 occurrences (plant species and ecological communities in this category have only 21 to 50 occurrences). Includes elements which are widely distributed in the state but with small populations/acreage or elements with restricted distribution, but locally abundant. Not yet imperiled in state but may soon be if current trends continue. Searching often yields additional occurrences.
- S4** Apparently secure in state, with many occurrences.
- S5** Demonstrably secure in state and essentially ineradicable under present conditions.
- SA** Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and vice-versa.
- SE** Elements that are clearly exotic in New Jersey including those taxa not native to North America (introduced taxa) or taxa deliberately or accidentally introduced into the State from other parts of North America (adventive taxa). Taxa ranked SE are not a conservation priority (viable introduced occurrences of G1 or G2 elements may be exceptions).
- SH** Elements of historical occurrence in New Jersey. Despite some searching of historical occurrences and/or potential habitat, no extant occurrences are known. Since not all of the historical occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work.
- SP** Element has potential to occur in New Jersey, but no occurrences have been reported.
- SR** Elements reported from New Jersey, but without persuasive documentation which would provide a basis for either accepting or rejecting the report. In some instances documentation may exist, but as of yet, its source or location has not been determined.
- SRF** Elements erroneously reported from New Jersey, but this error persists in the literature.
- SU** Elements believed to be in peril but the degree of rarity uncertain. Also included are rare taxa of uncertain taxonomical standing. More information is needed to resolve rank.
- SX** Elements that have been determined or are presumed to be extirpated from New Jersey. All historical occurrences have been searched and a reasonable search of potential habitat has been completed. Extirpated taxa are not a current conservation priority.
- SXC** Elements presumed extirpated from New Jersey, but native populations collected from the wild exist in cultivation.

SZ Not of practical conservation concern in New Jersey, because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations are too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped and protected. In other words, the migrant regularly passes through the state, but enduring, mappable element occurrences cannot be defined.

Typically, the SZ rank applies to a non-breeding population (N) in the state – for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population (B), for example certain lepidoptera which regularly die out every year with no significant return migration.

Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ will only apply when the migrants occur in an irregular, transitory and dispersed manner.

B Refers to the breeding population of the element in the state.

N Refers to the non-breeding population of the element in the state.

T Element ranks containing a "T" indicate that the infraspecific taxon is being ranked differently than the full species. For example *Stachys palustris* var. *homotricha* is ranked "G5T? SH" meaning the full species is globally secure but the global rarity of the var. *homotricha* has not been determined; in New Jersey the variety is ranked historic.

Q Elements containing a "Q" in the global portion of its rank indicates that the taxon is of questionable, or uncertain taxonomical standing, e.g., some authors regard it as a full species, while others treat it at the subspecific level.

.1 Elements documented from a single location.

Note: To express uncertainty, the most likely rank is assigned and a question mark added (e.g., G2?). A range is indicated by combining two ranks (e.g., G1G2, S1S3).

IDENTIFICATION CODES

These codes refer to whether the identification of the species or community has been checked by a reliable individual and is indicative of significant habitat.

Y Identification has been verified and is indicative of significant habitat.

BLANK Identification has not been verified but there is no reason to believe it is not indicative of significant habitat.

? Either it has not been determined if the record is indicative of significant habitat or the identification of the species or community may be confusing or disputed.

30 AUG 2004

BURLINGTON COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
*** Vertebrates						
ACCIPITER COOPERII	COOPER'S HAWK		T/T		G5	S3B, S4N
ACIPENSER BREVIROSTRUM	SHORTNOSE STURGEON	LE	E		G3	S3
AMBYSTOMA TIGRINUM TIGRINUM	EASTERN TIGER SALAMANDER		E		G5T5	S2
AMMODRAMUS SAVANNARUM	GRASSHOPPER SPARROW		T/S		G5	S2B
ARDEA HERODIAS	GREAT BLUE HERON		S/S		G5	S2B, S4N
BARTRAMIA LONGICAUDA	UPLAND SANDPIPER		E		G5	S1B
BOTAURUS LENTIGINOSUS	AMERICAN BITTERN		E/S		G4	S2B
BUTEO LINEATUS	RED-SHOULDERED HAWK		E/T		G5	S1B, S2N
CIRCUS CYANEUS	NORTHERN HARRIER		E/U		G5	S1B, S3N
CISTOTHORUS PLATENSIS	SEDGE WREN		E		G5	S1B
CLEMMYS INSCULPTA	WOOD TURTLE		T		G4	S3
CLEMMYS MUHLENBERGII	BOG TURTLE	LT	E		G3	S2
CROTALUS HORRIDUS HORRIDUS	TIMBER RATTLESNAKE		E		G4T4	S2
DOLICHONYX ORYZIVORUS	BOBOLINK		T/T		G5	S2B
ELAPHE GUTTATA GUTTATA	CORN SNAKE		E		G5T5	S1
FALCO PEREGRINUS	PEREGRINE FALCON		E		G4	S1B, S?N
GRAPTEMYS GEOGRAPHICA	COMMON MAP TURTLE		U		G5	S3
HALIAEETUS LEUCOCEPHALUS	BALD EAGLE	LT	E		G4	S1B, S2N
HYLA ANDERSONII	PINE BARRENS TREEFROG		T		G4	S3
MELANERPES ERYTHROCEPHALUS	RED-HEADED WOODPECKER		T/T		G5	S2B, S2N
PANDION HALIAETUS	OSPREY		T/T		G5	S2B
PASSERCULUS SANDWICHENSIS	SAVANNAH SPARROW		T/T		G5	S2B, S4N
PITUOPHIS MELANOLEUCUS	NORTHERN PINE SNAKE		T		G4T4	S3
MELANOLEUCUS						
PODILYMBUS PODICEPS	PIED-BILLED GREBE		E/S		G5	S1B, S3N
POECCETES GRAMINEUS	VESPER SPARROW		E		G5	S1B, S2N
PSEUDOTRITON MONTANUS	EASTERN MUD SALAMANDER		T		G5T5	S1
MONTANUS						
STERNA ANTILLARUM	LEAST TERN		E		G4	S1B

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BURLINGTON COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
STRIX VARIA	BARRED OWL		T/T		G5	S3B
SYNAPTOMYS COOPERI	SOUTHERN BOG LEMMING		U		G5	S2
*** Ecosystems						
BRACKISH TIDAL MARSH COMPLEX	BRACKISH TIDAL MARSH COMPLEX				G4	S2?
CAREX STRIATA VAR BREVIS	WALTER'S SEDGE COASTAL PLAIN				G7	S1S3
HERBACEOUS VEGETATION	INTERMITTENT POND HERBACEOUS VEGETATION					
COASTAL PLAIN INTERMITTENT POND	VERNAL POND				G3?	S2S3
DRY OAK-PINE FOREST	DRY OAK-PINE FOREST				G4G5	S4?
DWARF PINUS RIGIDA-QUERCUS (MARILANDICA, ILICIFOLIA)/COREMA CONRADII SHRUBLAND	PINE PLAINS (PP4/5)				G1	S1
ELEOCHARIS (OLIVACEA, MICROCARPA, ROBBINSII) - XYRIS (DIFFORMIS VAR DIFFORMIS, SMALLIANA) HERBACEOUS VEGETATION	SPIKERUSH (SMALLFRUIT, BRIGHT GREEN, ROBBIN'S) - YELLOWEYED GRASS (BOG, SMALL'S) COASTAL PLAIN INTERMITTENT POND HERBACEOUS VEGETATION				G2	S2
FLOODPLAIN FOREST	FLOODPLAIN FOREST				G4	S3?
FRESHWATER TIDAL MARSH COMPLEX	FRESHWATER TIDAL MARSH COMPLEX				G4?	S3?
MUHLENBERGIA TORREYANA HERBACEOUS VEGETATION	PINE BARRENS SMOKEGRASS COASTAL PLAIN INTERMITTENT POND HERBACEOUS VEGETATION				G2	S1
PANICUM RIGIDULUM VAR PUBESCENS - DICHANTHELIUM SP / SPHAGNUM SPP HERBACEOUS VEGETATION	REDTOP PANICGRASS - ROSETTE GRASS / SPHAGNUM MOSS COASTAL PLAIN INTERMITTENT POND HERBACEOUS VEGETATION				G2	S2

30 AUG 2004

BURLINGTON COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
PINE BARREN SAVANNA	PINE BARREN SAVANNA				G2	S2
PINUS RIGIDA SATURATED WOODLAND ALLIANCE	PITCH PINE LOWLANDS (UNDIFFERENTIATED)				G3	S3
PINUS RIGIDA-(P. ECHINATA)-QUERCUS SPP./QUERCUS (MARILANDICA, ILICIFOLIA) WOODLAND	PINE-OAK-SHRUB OAK WOODLAND (POW)				G3	S3
PINUS RIGIDA/QUERCUS (MARILANDICA, ILICIFOLIA)/PYXIDANTHERA BARBULATA WOODLAND	PITCH PINE-SHRUB OAK BARRENS (PB4/5)				G2	S2
RHEXIA VIRGINICA - PANICUM VERRUCOSUM HERBACEOUS VEGETATION	VIRGINIA MEADOW-BEAUTY - WARTY PANICGRASS COASTAL PLAIN INTERMITTENT POND HERBACEOUS VEGETATION				G2G3	S1S3

*** Invertebrates

AESHNA CLEPSYDRA	MOTTLED DARNER				G4	S2S3
AGROTIS BUCHHOLZI	BUCHHOLZ'S DART MOTH				G2	S2
ALASPIDONTA UNDULATA	TRIANGLE FLOATER		T		G4	S3
APHARETRA DENTATA	A NOCTUID MOTH				G4	S2S3
ATRYTONE AROGOS AROGOS	AROGOS SKIPPER		E		G3G4T1T2	S1
BOLORIA SELENE-MYRINA	A SILVER-BORDERED FRITILLARY		T		G5T5	S2
CALLOPHRYX HESSELI	HESSEL'S HAIRSTREAK				G3G4	S3S4
CALLOPISTRIA GRANITOSA	GRANITOSA FERN MOTH				G4G5	S2S3
CATOCALA CONSORS SORSCONI	THE CONSORT UNDERWING				G4T2T4	S1S3
CATOCALA HERODIAS GERHARDI	HERODIAS OR PINE BARRENS UNDERWING				G3T3	S3
CATOCALA JAIR SSP 2	JERSEY JAIR UNDERWING				G4T4	S3
CATOCALA PRETIOSA PRETIOSA	PRECIOUS UNDERWING				G4T2T3	S2S3

30 AUG 2004

BURLINGTON COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
CELITHEMIS MARTHA	MARTHA'S PENNANT				G4	S3S4
CELITHEMIS Verna	DOUBLE-RINGED PENNANT				G5	S2
CHYTONIX SENSILIS	A NOCTUID MOTH				G4	S1S3
CICINDELA PATRUELA	A TIGER BEETLE				G3T2T3	S2S3
CONSENTANEA						
CUCULLIA ALFARATA	A MOTH				G4	S2?
DATANA RANAECEPS	A HAND-MAID MOTH				G3G4	S3S4
ENALLAGMA PICTUM	SCARLET BLUET				G3	S3
ENALLAGMA RECURVATUM	PINE BARRENS BLUET				G3	S3
EUPHYES BIMACULA	TWO-SPOTTED SKIPPER				G4	S3
FARONTA RUBRIPENNIS	PINK STREAK				G3G4	S3
GOMPHUS APOMYIUS	BANNER CLUBTAIL				G4	S1
HELICODISCUS SINGLEYANUS	SMOOTH COIL				G4G5	S2S3
HESPERIA ATTALUS SLOSSONAE	DOTTED SKIPPER				G3G4T3	S2S3
HETEROCAMPA VARIA	A NOTODONTID MOTH				G3G4	S3
HYPOMECEIS BUCHHOLZARIA	BUCHHOLZ'S GRAY				G3G4	S3
IDAEA VIOLACEARIA	A GEOMETRID MOTH				G4	S1S3
ITAME SP 1	BARRENS ITAME				G3	S3
LAMPSILIS CARIOSA	YELLOW LAMPUSSEL		T		G3G4	S1
LAMPSILIS RADIATA	EASTERN LAMPUSSEL		T		G5	S3
LEPTODEA OCHRACEA	TIDEWATER MUCKET		T		G4	S1
LIBELLULA AURIPENNIS	GOLDEN-WINGED SKIMMER				G5	S1S2
LIGUMIA NASUTA	EASTERN PONDUSSEL		T		G4G5	S1
LITHOPHANE LEMMERI	LEMMER'S NOCTUID MOTH				G3G4	S2
LITHOPHANE LEPIDA ADIPEL	A NOCTUID MOTH				G4T4	S3S4
MACROCHILLO LOUISIANA	A NOCTUID MOTH				G4	S2S3
MEROLONCHE DOLLI	DOLL'S MEROLONCHE				G3G4	S1S3
MEROPLEON COSMION	A NOCTUID MOTH				G4	S1S2
METARRANTHIS LATERITIARIA	A GEOMETRID MOTH				G2G4	S1
METARRANTHIS PILOSARIA	COASTAL BOG METARRANTHIS				G3G4	S3S4

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BURLINGTON COUNTY
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NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
METARRANTHIS SP 2	A GEOMETRID MOTH				G4	S3S4
NEONYMPHA AREOLATA	A SATYR				G4T3T4	S3
SEPTENTRIONALIS						
NICROPHORUS AMERICANUS	AMERICAN BURYING BEETLE	LE	E		G2G3	SH
OZARBA AERIA	AERIAL BROWN				G4	SH
PAPAÏPEMA APPASSIONATA	PITCHER PLANT BORER MOTH				G4	S2S3
PONTIA PROTODICE	CHECKERED WHITE		T		G4	S1
PROBLEMA BULENTA	RARE SKIPPER				G2G3	S2
PTICHODIS BISTRIGATA	SOUTHERN PTICHODIS				G3	S1S3
RICHIA SP 2	A NOCTUID MOTH				G1Q	S1
SEMIOTHISA EREMIATA	THREE-LINED ANGLE MOTH				G4	SU
SOMATOCHLORA GEORGIANA	COPPERY EMERALD				G3G4	S1
SOMATOCHLORA PROVOCANS	TREETOP EMERALD				G4	S2S3
SPARTINIPHAGA CARTERAE	CARTER'S NOCTUID MOTH				G2G3	S2
ZALE SP 1	PINE BARRENS ZALE				G3G4	S3
ZANCLOGNATHA SP 1	A NOCTUID MOTH				G3G4	S3
*** Nonvascular plants						
SPHAGNUM CYCLOPHYLLUM	SPHAGNUM				G3	S2
SPHAGNUM PORTORICENSE	SPHAGNUM				G5	S2
*** Other types						
BALD EAGLE WINTERING SITE	BALD EAGLE WINTERING SITE				G?	S?
*** Vascular plants						
AECHYNOMENE VIRGINICA	SENSITIVE JOINT-VETCH	LT	E	LP	G2	S1
AGASTACHE NEPETOIDES	YELLOW GIANT-HYSSOP				G5	S2
AMIANTHIUM MUSCITOXICUM	FLY POISON				G4G5	S2
ARETHUSA BULBOSA	DRAGON MOUTH				G4	S2

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NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
ARISTIDA DICHOTOMA VAR CURTISSII	CURTISS' THREE-AWN GRASS				G5T5	S2
ARISTIDA LANOSA	WOOLLY THREE-AWN GRASS		E		G5	S1
ARISTIDA VIRGATA	WAND-LIKE THREE-AWN GRASS				G5T4T5	S2
ARTEMISIA CAMPESTRIS SSP CAUDATA	BEACH WORMWOOD				G5T5	S2
ASCLEPIAS LANCEOLATA	SMOOTH ORANGE MILKWEED				G5	S2
ASCLEPIAS RUBRA	RED MILKWEED			LP	G4G5	S2
ASCLEPIAS VARIEGATA	WHITE MILKWEED				G5	S2
ASCLEPIAS VERTICILLATA	WHORLED MILKWEED				G5	S2
ASIMINA TRILOBA	PAWPAW		E		G5	S1
ASTER CONCOLOR	EASTERN SILVERY ASTER			LP	G4?	S2
BIDENS BIDENTOIDES	ESTUARY BURR-MARIGOLD				G3	S2
BUCHNERA AMERICANA	BLUEHEARTS				G5?	SX
CACALIA ATRIPLICIFOLIA	PALE INDIAN PLANTAIN		E		G4G5	S1
CALAMAGROSTIS PICKERINGII	PICKERING'S REED GRASS		E		G4	S1
CALAMOVILFA BREVIPIILIS	PINE BARREN REEDGRASS			LP	G4	S4
CALYSTEGIA SEPIUM SSP ERRATICA	OCCLUDED BINDWEED		E		G5T?	SH.1
CARDAMINE LONGII	LONG'S BITTERCRESS		E		G3	SH
CAREX AGGREGATA	GLOMERATE SEDGE				G5	S1
CAREX BARRATTII	BARRATT'S SEDGE			LP	G4	S4
CASTILLEJA COCCINEA	SCARLET INDIAN-PAINTBRUSH				G5	S2
CIRSIMUM VIRGINIANUM	VIRGINIA THISTLE		E		G3	S1
CLEISTES DIVARICATA	SPREADING POGONIA		E	LP	G4	S1
CORALLORHIZA TRIFIDA	EARLY CORALROOT				G5	S2
COREMA CONRADII	BROOM CROWBERRY		E	LP	G4	S1
COREOPSIS ROSEA	ROSE-COLOR COREOPSIS			LP	G3	S2
CORNUS FOEMINA	STIFF DOGWOOD				G5	S2
CROTON WILLDENOWII	ELLIPTICAL RUSHFOIL			LP	G5	S2

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NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
CUSCUTA CEPHALANTHI	BUTTONBUSH DODDER		E		G5	S1
CUSCUTA CORYLI	HAZEL DODDER				G5	S2
CUSCUTA POLYGONORUM	SMARTWEED DODDER				G5	S2
CYPERUS LANCASTRIENSIS	LANCASTER FLAT SEDGE		E		G5	S1
CYPERUS POLYSTACHYOS	COAST FLAT SEDGE		E		G5T5	S1
CYPERUS RETROFRACTUS	ROUGH FLATSEDGE		E		G5	SH
CYPERUS TENUIFOLIUS	LOW SPIKE SEDGE		E		G5	SH
DESMODIUM PAUCIFLORUM	FEW-FLOWER TICK-TREFOIL		E		G5	S1
DESMODIUM SESSILIFOLIUM	SESSILE-LEAF TICK-TREFOIL		E		G5	S1
DESMODIUM STRICTUM	PINELAND TICK-TREFOIL			LP	G4	S2
DESMODIUM VIRIDIFLORUM	VELVETY TICK-TREEFOIL				G5?	S2
DRABA REPTANS	CAROLINA WHITLOW-GRASS		E		G5	SH
ECHINODORUS PARVULUS	DWARF BURRHEAD				G3Q	SH.1
ELATINE MINIMA	SMALL WATERWORT				G5	S2
ELEOCHARIS MELANOCARPA	BLACK-FRUIT SPIKE-RUSH		E		G4	S1
ELEOCHARIS TORTILIS	TWISTED SPIKE-RUSH		E		G5	S1
ERIOCAULON PARKERI	PARKER'S PIPEWORT				G3	S2
ERIOPHORUM TENELLUM	ROUGH COTTON-GRASS		E		G5	S1
ERYNGIUM AQUATICUM VAR AQUATICUM	MARSH RATTLESNAKE-MASTER				G4T4	S3
EUPATORIUM CAPILLIFOLIUM	DOG-FENNEL THOROUGHWORT		E		G5	S1
EUPATORIUM RESINOSUM	PINE BARREN BONESET		E	LP	G3	S2
GENTIANA AUTUMNALIS	PINE BARREN GENTIAN			LP	G3	S3
GEUM VERNUM	SPRING AVENS				G5	S2
HELONIAS BULLATA	SWAMP-PINK	LT	E	LP	G3	S3
HETERANTHERA MULTIFLORA	BOUQUET MUD-PLANTAIN				G4	S2
HYPERICUM ADPRESSUM	BARTON'S ST. JOHN'S-WORT		E		G2G3	S2
ISOETES RIPARIA VAR RIPARIA	SHORE QUILLWORT				G5?T5?Q	S3
JUNCUS CAESARIENSIS	NEW JERSEY RUSH		E	LP	G2	S2
JUNCUS GREENEI	GREENE'S RUSH				G5	S2

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KUHNIA EUPATORIODES	FALSE BONESET		E		G5T5	S1
LIMOSELLA SUBULATA	AWL-LEAF MUDWORT		E		G4G5	S1
LINUM INTERCURSUM	SANDPLAIN FLAX		E		G4	S1
LISTERA AUSTRALIS	SOUTHERN TWAYBLADE			LP	G4	S2
LOBELIA CANBYI	CANBY'S LOBELIA			LP	G4	S3
LUDWIGIA HIRTELLA	HAIRY PRIMROSE-WILLOW			LP	G5	S2
LUDWIGIA LINEARIS	NARROW-LEAF PRIMROSE-WILLOW			LP	G5	S2
LYGODIUM PALMATUM	CLIMBING FERN			LP	G4	S2
LYSIMACHIA HYBRIDA	LOWLAND LOOSESTRIPE				G5	S3
MELANTHIUM VIRGINICUM	VIRGINIA BUNCHFLOWER		E		G5	S1
MICRANTHEMUM MICRANTHEMOIDES	NUTTALL'S MUDWORT		E		GH	SH
MUHLENBERGIA TORREYANA	PINE BARREN SMOKE GRASS			LP	G3	S3
NARTHECIUM AMERICANUM	BOG ASPHODEL	C	E	LP	G2	S2
NELUMBO LUTEA	AMERICAN LOTUS		E		G4	S1
NUPHAR MICROPHYLLUM	SMALL YELLOW POND-LILY		E		G5T4T5	SH
NYMPHOIDES CORDATA	FLOATINGHEART			LP	G5	S3
OLDENLANDIA UNIFLORA	CLUSTERED-BLUETS				G5	S3
ONOSMODIUM VIRGINIANUM	VIRGINIA FALSE-GROMWELL		E		G4	S1
OPHIOGLOSSUM PUSILLUM	NORTHERN ADDER'S-TONGUE				G5	S3
PANICUM ACICULARE	BRISTLING PANIC GRASS		E		G4G5	S1
PANICUM OLIGOSANTHES VAR OLIGOSANTHES	FEW-FLOWER PANIC GRASS				G5T5?	S1S2
PANICUM SCABRIUSCULUM	SHEATHED PANIC GRASS				G4	S2
PASPALUM DISSECTUM	MUDBANK CROWN GRASS				G4?	S2
PENSTEMON LAEVIGATUS	SMOOTH BEARDTONGUE		E		G5	S1
PHLOX PILOSA	DOWNY PHLOX		E		G5T5	SH
PHORADENDRON LEUCARPUM	AMERICAN MISTLETOE			LP	G5	S2
PITYOPSIS FALCATA	SICKLE-LEAF GOLDEN-ASTER			LP	G3G4	S3
PLATANATHERA CRISTATA	CRESTED YELLOW ORCHID			LP	G5	S3
PLATANATHERA INTEGRATA	YELLOW FRINGELESS ORCHID		E	LP	G3G4	S1

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NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
POLEMONIUM REPTANS	GREEK-VALERIAN		E		G5	S1
POTAMOGETON CONFEROIDES	ALGAE-LIKE PONDWEED				G4	S3
POTAMOGETON OAKESIANUS	OAKES' PONDWEED				G4	S2
PRENANTHES AUTUMNALIS	PINE BARREN RATTLESNAKE-ROOT			LP	G4G5	S2
PTELEA TRIFOLIATA	WAFFER-ASH		E		G5T5	S1
RANUNCULUS LONGIROSTRIS	LONG-BEAK WATER BUTTERCUP				G5	S2
RANUNCULUS PUSILLUS VAR PUSILLUS	LOW SPEARWORT				G5T4?	S2
RHYNCHOSPORA CEPHALANTHA	LARGE-HEAD BEAKED-RUSH			LP	G5	S3
RHYNCHOSPORA INUNDATA	SLENDER HORNED-RUSH			LP	G3G4	S2
RHYNCHOSPORA KNIESKERNII	KNIESKERN'S BEAKED-RUSH	LT	E	LP	G2	S2
RHYNCHOSPORA MICROCEPHALA	SMALL-HEAD BEAKED-RUSH		E		G5T5	S1
RHYNCHOSPORA NITENS	SHORT-BEAKED BALD-RUSH				G4?	S2
RHYNCHOSPORA OLIGANTHA	FEW-FLOWER BEAKED-RUSH				G4	S2
RHYNCHOSPORA PALLIDA	PALE BEAKED-RUSH				G3	S3
RHYNCHOSPORA SCIRPOIDES	LONG-BEAK BALD-RUSH				G4	S2
RIBES CYNOSBATI	PRICKLY GOOSEBERRY				G5	SH
RODALA RAMOSIOR	TOOTH CUP				G5	S3
SABATIA DODECANDRA VAR DODECANDRA	LARGE MARSH-PINK				G5?T4T5	S2
SAGITTARIA AUSTRALIS	SOUTHERN ARROWHEAD		E		G5	S1
SAGITTARIA SUBULATA	AWL-LEAF ARROWHEAD				G4	S2
SAGITTARIA TERES	SLENDER ARROWHEAD		E		G3	S1
SCHIZAEA PUSILLA	CURLY GRASS FERN			LP	G3	S3
SCHOENOPELECTUS NOVAE-ANGLIAE	NEW ENGLAND BULRUSH				G5	S2
SCHOENOPELECTUS SMITHII	SMITH'S CLUB-RUSH				G5?	S2
SCHOENOPELECTUS TORREYI	TORREY'S BULRUSH		E		G5?	S1
SCHWALBEA AMERICANA	CHAFFSEED	LE	E	LP	G2	S1
SCIRPUS LONGII	LONG'S WOOLGRASS		E	LP	G2	S2
SCLERIA MINOR	SLENDER NUT-RUSH			LP	G4	S4

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NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
SCLEROLEPIS UNIFLORA	BOG BUTTONS			LP	G4	S2
SISYRINCHIUM FUSCATUM	SAND-PLAIN BLUE-EYED GRASS				G5?	S2
SOLIDAGO STRICTA	WAND-LIKE GOLDENROD			LP	G5	S3
SPIRANTHES LACINIATA	LACE-LIP LADIES'-TRESSES		E		G4G5	S1
STYLISMA PICKERINGII VAR PICKERINGII	PICKERING'S MORNING-GLORY		E	LP	G4T2T3	S1
STYLOSANTHES BIFLORA	PENCIL-FLOWER				G5	S3
TIPULARIA DISCOLOR	CRANEFLY ORCHID				G4G5	S3
TOFIELDIA RACEMOSA	FALSE ASPHODEL		E	LP	G5	S1
UTRICULARIA BIFLORA	TWO-FLOWER BLADDERWORT		E		G5	S1
UTRICULARIA GIBBA	HUMPED BLADDERWORT			LP	G5	S3
UTRICULARIA RESUPINATA	REVERSED BLADDERWORT		E	LP	G4	S1
UVULARIA PUBERULA VAR NITIDA	PINE BARREN BELLWORT		E		G5T3?	S2
VALERIANELLA RADIATA	BEAKED CORNSALAD		E		G5	S1
VERBENA SIMPLEX	NARROW-LEAF VERVAIN		E		G5	S1
VICIA AMERICANA VAR AMERICANA	AMERICAN PURPLE VETCH				G5T5	S2
XYRIS CAROLINIANA	SAND YELLOW-EYED-GRASS		E	LP	G4G5	S1
XYRIS FIMERIATA	FRINGED YELLOW-EYED-GRASS		E		G5	S1



In Reply Refer To:
11-CPA-0198

United States Department of the Interior

FISH AND WILDLIFE SERVICE

New Jersey Field Office
Ecological Services
927 North Main Street, Building D
Pleasantville, New Jersey 08232
Tel: 609/646 9310
Fax: 609/646 0352
<http://www.fws.gov/northeast/njfieldoffice>



SEP 21 2011

Mr. Joseph R. Rhyner
87 CES/CEAN
Joint Base McGuire-Dix-Lakehurst
2401 Vendenberg Avenue
Joint Base McGuire-Dix-Lakehurst, New Jersey 08641

Dear Mr. Rhyner:

The U.S. Fish and Wildlife Service (Service), New Jersey Field Office has reviewed the *Draft Environmental Assessment and Draft Finding of No Significant Impact and Finding of No Practical Alternative for the proposed Airfield Safety Zone Vegetation Clearing at Joint Base McGuire-Dix-Lakehurst, Burlington County New Jersey* (DEA). The Service has also reviewed the August 23, 2011 *Phase I Bog Turtle Habitat Evaluations and Wetland Surveys at Joint Base McGuire, Dix, Lakehurst (McGuire Air Force Base, Burlington County, New Jersey)* conducted by Herpetological Associates, Incorporated in conjunction with Elliott Lewis Corporation. The project entails removal of trees from 175 acres surrounding the McGuire airfield to maintain safety zones in accordance with Unified Facilities Criteria 3-260-01.

AUTHORITY

The following comments on the proposed action are provided pursuant to Section 7 of the Endangered Species Act of 1973 (ESA) (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) and the Migratory Bird Treaty Act of 1918 (MBTA) (40 Stat. 755; 16 U.S.C. 703-712), as amended, to ensure the protection of federally listed endangered and threatened species, and migratory birds. Additional comments are provided as technical assistance in preparation of a final EA pursuant to the National Environmental Policy Act (83 Stat. 852; 42 U.S.C. 4321 *et seq.*) (NEPA).

FEDERALLY LISTED SPECIES

Bog Turtle

The Service generally concurs with the proposal to carry out tree removal from areas of potential bog turtle habitat (wetlands CZ E3-A, E3-B, and E3-C) in accordance with conservation measures previously approved by the Service for implementation along JCP&L rights-of-way.

Consistent with the measures used by JCP&L, the Service recommends the following revisions to the "Best Management Practices" listed in the August 23, 2011 bog turtle report by Herpetological Associates.

1. During all phases of tree cutting and removal operations in the vicinity of bog turtle habitat (wetlands CZ E3-A, E3-B, and E3-C), a Service's Qualified Bog Turtle Surveyor should be present. Prior to starting work, the Qualified Bog Turtle-Surveyor will meet with Elliott Lewis Corporation's subcontracted clearing crew supervisor and work staff to explain the procedures to be followed.
2. Prior to cutting a tree, a Service's Qualified Bog Turtle Surveyor should search and check the area for turtles and other wildlife, so no animals are harmed when a cut tree lands on the ground.
3. While working in bog turtle habitat, all trees and shrubs will only be cut manually with suitable chain saws. In order to direct where a tree would land after being cut, a long guide cable or rope (75 to 100 feet long), should be attached (secured safely), to the upper portion of the tree trunk and pulled tightly with a backhoe or skidder. The tension on the cable will help pull the cut tree in the desired direction (away from the potential bog turtle habitat).
4. Once the tree falls to the ground, the backhoe or skidder can then pull it up to dry land where it can be carried away and loaded on a truck. Then all tree trunks and branches should be removed from the wetland and general work area.
5. The Qualified Bog Turtle Surveyor will supervise all tree cutting and related work operations. The Qualified Bog Turtle Surveyor will monitor and inspect all the methods used by Elliott Lewis Corporation's subcontractor and generally be present during all phases of tree and brush removal operations associated with bog turtle habitat.
6. No motorized vehicles will be used in of bog turtle habitat.
7. No equipment or materials will be staged or stored in bog turtle habitat.
8. Work will take place between October 15 and March 31.
9. If necessary, any herbicide use will be limited to manual application of glyphosate-based herbicide to cut stumps.
10. Woody vegetation will not be pulled out by the roots in mucky areas to avoid destruction of potential hibernacula. Coordinate with the Service if stumps need to be ground or removed; additional coordination measures may be necessary.

Other Federally Listed Species

No other federally listed or proposed threatened or endangered flora or fauna under Service jurisdiction are known to occur within the vicinity of the proposed project site. Therefore, no further consultation pursuant to Section 7 of the Endangered Species Act is required by the Service. If additional information on federally listed species becomes available, or if project plans change, this determination may be reconsidered.


MIGRATORY BIRDS

The Service has reviewed the DEA and has determined that removal of 175 acres of forest will have an adverse impact on migratory birds if conducted during the nesting season (destruction of nests with eggs or unfledged birds). The Breeding Bird Atlas (Niles *et al.*, 2001) lists 91 species of breeding migratory birds that occur in the vicinity of the proposed project site. The Service requests a seasonal restriction on tree cutting between March 1 and July 31 to avoid impacts to birds protected under the MBTA. Pursuant to Section 704(a) of the MBTA, the Armed Forces are exempted for the incidental taking of migratory birds during military readiness activities authorized by the Secretary of Defense; however, this seasonal restriction was implemented for completion of previous projects (*e.g.*, Fort Dix Military Construction Projects, Joint Improvised Explosive Device Defeat Organization Training Facility). We request that you implement the seasonal restriction on tree cutting. We also recommend re-vegetating unused barren areas within McGuire to mitigate for the loss migratory bird nesting habitat.

Thank you for the opportunity to comment on the DEA. Please contact Carlo Popolizio at (609) 383-3938, extension 32, if you require further assistance.

Sincerely,



 J. Eric Davis Jr.
Field Supervisor

REFERENCE

Niles, L.J., M. Valent, J. Tash and J. Myers. 2001. New Jersey's Landscape Project: Wildlife habitat mapping for community land-use planning and endangered species conservation. New Jersey Department of Environmental Protection, New Jersey Division of Fish and Wildlife, Endangered and Nongame Species Program.

Appendix E

New Jersey DEP Land Use Documentation



State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION

DIVISION OF LAND USE REGULATION

P.O. Box 439, Trenton, NJ 08625

www.state.nj.us/dep/landuse

PHONE # (609) 777-0454

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

August 11, 2010

Attn: Joseph Rhyner
87 CES/CEANQ JRR
2403 Vandenburg Avenue
Joint Base McGuire-Dix-Lakehurst, 08641

RE: Withdrawal of Freshwater Wetland GP and Letter of Interpretation Applications
File No. 0325-09-0001.1-FWW100001/2 (FWGP9/FWLI)
Applicant: Joint Base McGuire-Dix-Lakehurst
Block 15 – Lot 1, New Hanover Township; Burlington County

Dear Mr. Rhyner:

As per July 22, 2010 correspondence from Robert R. Previte, the above referenced applications for a Freshwater Wetland General Permit No. 9 and Verification Letter of Interpretation have been withdrawn from review status and are no longer active. As per our recent discussions, the Freshwater Wetlands Protection Act does not regulate the removal of above-ground vegetation within the Pinelands, although such activities would still be regulated within applicable riparian zones of regulated drainage features under the Flood Hazard Area Control Act.

Pursuant to N.J.A.C.7:7A-12.6, the fees paid for the referenced applications would normally be non-returnable. However, it has been determined that you may request the return of the fees since you were mistakenly led to believe, in dealings with the Department and Pinelands Commission, that they were necessary to carry out your intended activity. Your request for refund has been forwarded to our Application Support Unit for proper crediting.

Should you have any questions about this correspondence please contact Bruce Stoneback at the above address or at (609) 777-0454.

Sincerely,

Ryan J. Anderson, Supervisor
Bureau of Coastal Regulation
Division of Land Use Regulation

C: Municipal Clerk



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

JUN 6 2011

Mr. Joseph R. Rhyner
87 CES/CEAN
2403 Vandenberg Avenue
Joint Base McGuire-Dix-Lakehurst, NJ 08641

Dear Mr. Rhyner:

The Environmental Protection Agency (EPA) has reviewed the Department of the Air Force's April 2011 Draft Environmental Assessment, and Draft Finding of No Significant Impact and Finding of No Practical Alternative for the Environmental Assessment (EA) Addressing Proposed Airfield Safety Zone Vegetation clearing at Joint Base McGuire-Dix-Lakehurst, New Jersey (JBMDL). The proposed project would remove the vegetative obstructions within the airfield safety zones in the McGuire and Dix areas of JBMDL to meet required management measures developed in the United Facilities Criteria regulations. While the entire safety zone encompasses about 1,038 acres of land, approximately 175 acres will need to be maintained under this proposed action. Of the 175 acres needing maintenance, 135 acres are forested wetland and 15 acres are shrub/scrub wetlands. Clearing activities will be carried out with traditional logging methods. Tree stumps will not be removed, and no regrading of land will occur.

EPA's comments on the draft EA are as follows:

- 1) The document does not include an analysis of the possible indirect impacts of the project. The Council on Environmental Quality defines indirect effects as those effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems. For example, the document should discuss whether the vegetation removal will increase the number of aircraft that will utilize the runways or increase the size of aircraft able to use the runways, and what affect that may have on the surrounding environment.
- 2) The cumulative impacts section of the document must include a discussion of other projects that have taken place on the JBMDL and its environs, and those projects that are reasonably foreseeable in the future. In February 2010, an EA addressing the "Hardening of Overruns for Runway 06/24" at JBMDL was

released. If this project has been constructed or will be constructed, it must be included in the cumulative impacts discussion for the present EA. EPA has also received a letter outlining the proposed JBMDL Flight Activity Facility to be located at the approach end of Runway 24. In addition, the System Evaluation Report included in this EA appears to state that there have been other tree removals on Fort Dix in the recent past. These projects and any others should be listed and analyzed before a determination of no significant cumulative impact is made.

3) As the site is located in the New Jersey Coastal Plain Sole Source Aquifer designated by the EPA as a Sole Source Aquifer on June 24, 1988 (citation 53 FR 23791), EPA has also reviewed the project in accordance with Section 1424(e) of the 1974 Safe Drinking Water Act, PL 93-523. Based on our review of the information provided, we do not anticipate that this project will result in significant adverse impacts to ground water quality. Accordingly, the project satisfies the requirements of Section 1424(e) of the Safe Drinking Water Act.

4) EPA acknowledges that the Department of the Air Force is willing to clear the forested area under seasonal restrictions. However, we recommend that the Department of the Air Force consult the New Jersey Department of Environmental Protection's Division of Wildlife and the U.S. Fish and Wildlife Service to determine the appropriate seasonal restrictions and include them in the Finding of No Significant Impact.

5) EPA understands that the purpose of the action is to increase the safety of aircraft landing or taking off from the JBMDL. However, it appears that cost may be a factor in determining the total amount of trees to be removed. Given that human activities (e.g., burning fossil fuels, deforestation, and urbanization) have changed the composition of the atmosphere and therefore are very likely influencing the earth's climate, the U.S. Government has established a climate policy. As such, and if cost was indeed a factor, we ask that you reconsider minimizing the number of trees to be removed while maintaining required safety levels in order to reduce the amount of carbon sink lost. Further, to offset the necessary loss of carbon sink, EPA suggests that the applicant re-plant native trees elsewhere to mitigate for the removal of approximately 135 acres of existing trees. We would also recommend that an invasive plant species control plan be implemented in the newly cleared area if one is not already included in the JBMDL's Vegetative Management Plan.

EPA would also like to use the opportunity to encourage you to implement green practices and techniques during the clearing of the safety zone. For example, air emissions during the clear cutting will include particulate matter (PM_{2.5} and PM₁₀). To reduce the potential health and environmental impacts of these pollutants in the project

area, the installation of diesel particulate filters (DPF) on trucks or construction equipment should be considered. DPF's can reduce diesel particulate emissions by 90 percent for stationary and non-stationary diesel equipment. To learn more about this technology and its application, you may reference DPF's at <http://www.epa.gov/cleandiesel/technologies/retrofits.htm> or contact us directly.

If you have any questions, please call Lingard Knutson of my staff at (212) 637-3747.

Sincerely,

A handwritten signature in cursive script that reads "Grace Musumeci".

Grace Musumeci, Chief
Environmental Review Section



State of New Jersey
THE PINELANDS COMMISSION

PO Box 402

New Lisbon, NJ 08064

(609) 894-1300

CORIS CHRISTIE
Governor

KIM GUADAGNOLI
Lt. Governor

Nancy Wittenberg
Executive Director

June 3, 2011

Ruth Foster
Office of Permit Coordination and Environmental Review
PO Box 402
Trenton, NJ 08625

Please Always Refer To
This Application Number

Re: Application # 1991-1149.042
Joint Base McGuire-Dix-Lakehurst

Dear Ms. Foster:

Thank you for the opportunity to comment on the Environmental Assessment submitted to the Commission on May 10, 2011 by the New Jersey Department of Environmental Protection (NJDEP). The Assessment concerns proposed airfield safety zone vegetation clearing at Joint Base McGuire-Dix-Lakehurst.

On November 25, 2009, we received a letter from the Commander of Joint Base McGuire-Dix-Lakehurst advising the Pinelands Commission that based upon operational requirements to maintain the primary surface and runway clear zones, the Commander determined that an application to the Pinelands Commission for the approval of the proposed clearing would be incompatible with national defense requirements. The Pinelands Comprehensive Management Plan (CMP, N.J.A.C. 7:50-4.52(d)1&2) provides that if the Commander of a military installation determines that compliance with the provisions of the CMP would be incompatible with the installation's mission, safety or other national defense requirements, the installation Commander shall notify the Commission in writing. Upon Commission receipt of such notification, compliance with any provision of the CMP shall be deemed to be waived. Based upon the written notification from the Commander, compliance with any provision of the CMP was deemed to be waived.

We have completed our review of the Environmental Assessment and have identified several areas of concern regarding the proposed clearing of approximately 213 acres with the environmental standards of the CMP. It has not been demonstrated that the proposed clearing is consistent with the following standards of the CMP.



www.nj.gov/pinelands

General Information: Info@njpines.state.nj.us

Application Specific Information: AppInfo@njpines.state.nj.us 19911149.042*

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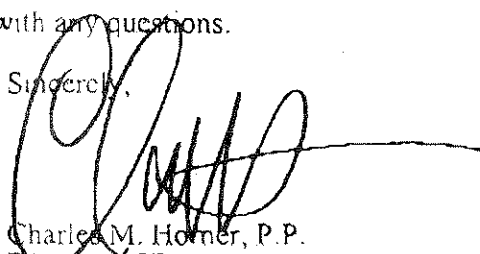
2

- **Threatened and Endangered Species** – The Commission has records of numerous threatened and endangered species in the vicinity of the proposed clearing including, Barred owl, Cooper's hawk, Northern pine snake and Pine Barren treefrog. The applicant has not provided any information to demonstrate that the proposed clearing would be designed to avoid irreversible adverse impacts on habitats that are critical to the survival of any local population of threatened or endangered animals or on the survival of any local population of threatened or endangered plants.
- **Wetlands and Wetland Buffers** – The majority of the proposed clearing will be located within wetlands or required buffers to wetlands. The CMP permits runway improvements within wetlands and wetland buffers provided that the applicant demonstrates that the proposed development meets certain conditions (N.J.A.C. 7:50-6.13). The applicant has not provided any information to demonstrate that the proposed clearing would be consistent with CMP wetland protection standards. Specifically, the applicant has not demonstrated that there are no feasible alternatives which result in less significant adverse impacts on wetlands, or that the proposed clearing has included all practical measures to mitigate the adverse impacts on wetlands.
- **Stormwater** – The applicant has not provided any information to demonstrate that the proposed clearing will be consistent with the stormwater standards of the CMP.

Please note that the proposed clearing may require authorization under the State's Freshwater Wetlands Protection Act Rules. The NJDEP and the Pinelands Commission have entered into a Memorandum of Agreement (MOA), which delegates authority from NJDEP to the Commission to authorize freshwater wetlands General Permits in the Pinelands Area. However, the MOA provides that for those activities for which an application to the Commission is not required and the activity is regulated by the State Program, a permit shall be obtained from the NJDEP. In this instance, because an application to the Commission is not required, NJDEP would be responsible for issuing any necessary wetlands permit.

Please do not hesitate to contact me with any questions.

Sincerely,



Charles M. Horner, P.P.
Director of Regulatory Programs

c: Nancy Wittenberg, Executive Director

Appendix F
Firewood Survey

Estimated firewood value for proposed clearing, north of Texas Ave adjacent to eastern side of runway 06/24

The mostly wooded area encompassing over a 100 acres is broken down into two sections of forested areas. These areas were sampled to evaluate and estimate the possible firewood value for reimbursement revenue to JBMDL Natural Resources. The project clearing covers an area clearing a 400' buffer to the eastern side of the fence line along runway 06/24. The areas were sampled using plots at a distance of 330' apart and a 1/10 of an acre plot size resulting in 23 usable data points (based on research by Gevorkiantz and Olsen 1955).

Points were randomly selected to be representative of where firewood would be harvested. Large Pitch Pine (*P. rigida*) were omitted from these sample areas and included as zero points where heavily present as to keep the survey impartial and not disrupted by non-firewood species. The survey only included trees over 5" DBH (diameter at breast height) to be representative of only useful and harvestable firewood. The area contains a variety of oaks, White Oak (*Quercus alba*), Black Oak (*Q. velutina*), Scarlet Oak (*Q. coccinea*), Bur Oak (*Q. macrocarpa*), Swamp White Oak (*Q. bicolor*), Willow Oak (*Q. phellos*), and Chestnut Oak (*Q. prinus*). The suggested clearing zone also had a variety of mixed hardwoods including Red Maple (*Acer rubrum*), Sweetgum (*Liquidambar styraciflua*), Black Gum (*Nyssa sylvatica*), Black Locust (*Robinia pseudoacacia*), Sassafras (*Sassafras albidum*), and Tree of Heaven (*Ailanthus altissima*). The oaks were tallied separately for their potentially higher desired value for firewood.

The oaks represented 10 cords per acre, with some specimens that were mill quality as opposed to firewood, and 14 cords of mixed hardwoods per acre. While the removal and harvesting of some of these acres will be increasingly difficult and costly, as soils change from

upland to lowland muck and swamp, using an approved value for a firewood program (24 cords per acre at \$15 a cord) the representative loss to JBMDL would be approximately \$38,600. The initial EA was incomplete in regards to the monies due back to JBMDL. Losses from this project not only affect the natural resources of the base, but also show impact to money generated and costs incurred to the clearing and removal of timber from this ~105 acre stand of forested wetlands.